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FLIGHT

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The King and Queen at the aviation grounds at Aldershot, watching the Army airship in flight. On the ground can be seen clearly B.E.1, one of the new four-bladed-propeller Army biplanes built at the Royal Aircraft Factory. B.2

EDITORIAL

The
War Office
Trials.

After months of delay the War Office has at last issued its regulations which are to govern the military tests of aeroplanes for the use of the Army. Certainly the delay seems to us to require some sort of explanation, for, seeing that the competing machines have to be entered by June 15th and delivered on Salisbury Plain by the July 15th, it has not left manufacturers over much time to introduce and try out desirable modifications which might be suggested by the regulations. It would surely have been easy to have announced the definite conditions three months ago, seeing that they were more or less in draft even earlier than that. However, the case is as it is and the makers who intend to compete will simply have to make the best of it.

So far as the conditions themselves are concerned, there does not seem to be any essential alteration of the text of the preliminary requirements notified when the competition was first announced. Such alterations as there are appear to react in the direction of making the test conditions slightly more elastic than seemed probable and this is certainly to the good. Nothing of an impossible nature is demanded, while at the same time it will need a good machine and a good man flying it to come through with satisfaction to everybody concerned. In point of fact, the most serious criticism that can be levelled at the authorities is, as we originally pointed out, in regard to the amount of the prize-money offered, particularly so far as the all-British machine is concerned. In comparison with the amounts given by the French Government for the military trials of last year the prizes seem absolutely beggarly and parsimonious when we consider the vital issues involved. Then, too, we still miss altogether any mention of British engines, which is a great pity. With the knowledge at the designer's disposal nowadays it is almost true to say that anyone can construct a practicable aeroplane, but the successful aero-motor is quite another matter and it is in this direction more even than in that of the complete machine that encouragement to emulation is needed.

There is just one other point upon which we could have wished the conditions to be more explicit and that is on the question of the dates of the competition proper. It would certainly have been better had some fixed date been announced for the commencement of the competition, in order that intending competitors might have had some sort of definite knowledge of what constitutes the "reasonable period" over which the preliminary tests are to extend. It is well to draw such regulations as those we are discussing in as elastic a manner as possible, but there is a limit beyond which elasticity may easily become a source of dispute.

The King
and his
Aeroplane
Corps.

His Majesty King George V is a much privileged monarch, for during the past two or three weeks he has seen wonders that no sovereign, living or dead, has ever witnessed in the world's history. He has been at sea in command of one of the most powerful squadrons of ships of war ever gathered together for tactical exercises under a single flag, and in the course of that cruise he has seen his naval flyers performing marvels of flight, under all sorts of conditions of weather. He has been brought into personal touch with the realities of flight and has had demonstrated in

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the most remarkable manner the salient fact that the conquest of the air has made most radical changes in the conditions under which the wars of the future will be fought. So far as land operations are concerned, this was realised to be true long enough ago, but we do not think the same can be said of the conditions of naval war. As a matter of fact, it is only quite recently that even experts regarded at all seriously the possibilities of the aeroplane being of any great use to the naval commander of the future, but much has been done lately to develop the type most suitable for naval use. The "silent service" may work quietly but it works well, and His Majesty must have been deeply impressed by what the Naval Wing of his new Royal Flying Corps, handicapped as they have been in the past, were able to show him.

Following hard on the Fleet operation came the King's visit to the headquarters of the Army in the South, where he again witnessed several fine flights by officers of the Military Wing, which must again have left a deep impression upon his mind. It is, we think, a matter for great congratulation that King George has shown himself to be so deeply interested in the progress of the new arm. It cannot but have its due effect upon his military advisers and their policy, and that that effect will be an excellent one we have no doubt at all.

* * *

We have not the slightest desire to pose as the champions of the Royal Aircraft Factory, but we cannot help noticing that in several quarters there seems to be a dead set made at the Factory and those responsible for its conduct. Time after time we see it stated that the Factory is laying itself out, or intends to do so, to compete with the private constructor in the building of aeroplanes for the Army and Navy. Capital has been made out of the fact that three machines built in the Factory were shown to the King on the occasion of his recent visit to Aldershot, and these are taken as the text of a sermon on the iniquity of the directorate. Well, we are quite easy in our minds about it all. The most definite assurances have been given from the highest quarters that the Factory is *not* to be worked in competition with the private constructing firms, and its scope and limitations have been very emphatically defined. Our view of the matter is that the pronouncements of those who are responsible for national policy are entitled to at least some respect and, for our part, we accept them without reserve. If, however, it should turn out that the statements of those in authority have merely been made for the purpose of throwing dust in the eyes of the public—which we utterly decline to believe on the evidence which has been served up as proof of official prevarication—all we can say is that those who made them will be blackened with the deserved infamy of the convicted perjurer. That is plain speaking, we know, but the statements referred to have been too definite to admit of any other construction being placed upon a breach of them. There are many men, altogether outside the influence of "Votes," who, in the almost impossible event of the responsible authorities wishing to throw to the winds all sense of honour by backing on their own solemn undertakings, would feel it incumbent in them to fight for the newly born British industry and justify the statements which they have themselves put forward in all honesty.

HENDON SUMMER MEETING.

WEATHER conditions on Saturday last were much more favourable for flying than on the previous week-end meeting, the wind averaging 15 miles per hour. On this occasion all the contests were carried out in their entirety, and some excellent exhibition flying was put up during the day. The attendance, too, was very good, though not as large as on previous occasions; but the threatening appearance of the weather earlier in the day might be held responsible for this, not lack of interest, which seems to be as strong as ever.

The first up was Grahame-White, who flew the Howard Wright biplane No. 10—still going strong—for about five minutes. At the same time, Blériot No. 6 and the Radley-Moorhouse monoplane were brought to the starting line. Shortly after Ewen flew the Caudron biplane for three or four minutes, and then lined up for the cross-country handicap. There were four entrants for this event—Turner (Howard Wright biplane No. 10), Ewen (Caudron biplane No. 4), Moorhouse (Radley-Moorhouse monoplane No. 8) and Hucks (Blériot monoplane No. 6). The handicaps were as follows:—Hucks, scratch; Turner, 13 mins. 17 secs. start; Ewen, 4 mins. 32 secs. start; and Moorhouse, 17 secs. start. The latter did not get away owing to engine trouble. The course was to Elstree and back, the journey having to be completed twice. Turner was the first home, his time being 33 mins. 44 $\frac{1}{2}$ secs.; Hucks, second, with 22 mins. 32 secs. to his credit; Ewen following close behind, having taken 29 mins. 12 secs. to cover the course. After this race, Moorhouse gave an exhibition flight of nearly half-an-hour's duration. He flew high and out over the surrounding country. Before Moorhouse came down Mr. Crawshay was out on his 35-h.p. Anzani-Blériot, and put in some cross-country flying.

At 5 o'clock the speed handicap started. This was held in two heats of 12 laps each and a final. Valentine (Bristol monoplane) and Hucks (Blériot) were in the first heat, and Turner (Howard Wright) and Ewen (Caudron biplane) in the second. Hucks gave Valentine 34 secs. start and Ewen conceded Turner 8 min. 25 secs.

Valentine came down before he reached the second pylon owing to engine trouble, so the first heat was a walk over for Hucks.

In the second heat Turner had covered nearly four laps before Ewen was "let go," but the little Caudron biplane rapidly caught up its rival and passed Turner when the latter had totalled nine laps. Turner came to earth on completing his tenth lap, thinking he had finished, but he immediately realised his mistake. Fortunately, mechanics were at hand and he was soon on his way again to complete the last two laps. In spite of this delay, however, Ewen was unable to better Turner's time, so the second heat went to the latter. Both pilots took the pylons with excellent banks.

It was decided to hold the altitude contest next and the final of the speed handicap after, with a fresh handicap, and over a course of six laps. Hucks and Moorhouse entered for the contest with the following result:—Moorhouse, 5,900 feet; Hucks, 4,100 feet. Shortly after 6 o'clock Grahame-White gave a short flight on the Farman biplane. Mrs. Stocks was also out on the same machine, slightly damaging the chassis when landing.

Sunday afternoon was absolutely perfect, there being practically no wind at all—the "ananiometer" registering zero all the afternoon. At one time, about 3.30 p.m., there were four machines up in the air at once: Lewis Turner, with passenger on the Howard Wright biplane, Grahame-White on the Farman biplane, Ewen on the Caudron biplane, and Hucks on the Blériot monoplane. Turner and Hucks had both started at the same time, the former from the 1st. enclosure and the latter from the Grahame-White sheds. They met at right angles in the middle of the ground and Turner just managed to pass underneath Hucks; it looked at first as if there was going to be a bit of a bust up. Ewen displayed the speed of his little Caudron biplane to great advantage by passing both Turner and Grahame-White who were flying close together. At about 4 o'clock Turner was up again on the "bus" with a passenger for about eight minutes, and shortly after Mrs. Stocks arrived on her



THE WEEKLY FLYING MEETINGS AT HENDON.—Mr. Lewis Turner on the Howard Wright just getting away in the cross-country handicap.

Flanders car. Grahame-White next took the "bus" up with a passenger and flew for about eight minutes. At 4.15 p.m. Mr. Moorhouse started for Brooklands on the Radley-Moorhouse monoplane.

While Moorhouse was attaining the required height before steering across country, Grahame-White again took a passenger up on the "bus," after which he handed the biplane over to Mrs. Stocks. She flew very steadily for 20 minutes, and made a very neat landing. In the meantime Hucks went up on the Blériot, and Ewen on the Caudron put in a few circuits, making some very fine banks at Pylon No. 2 for a photographer. At 4.55 p.m., Turner took a clerical gentleman for a short flight on the "bus," after which Mr. Gates gave an exhibition flight on the same machine. Mr. Grahame-White then took Miss Dorothy Taylor up on the "bus" for a couple of circuits, finishing with a *vol plané*, apparently somewhat to the alarm of his passenger, who gave a series of short ejaculations—Mr. Grahame-White by way of contrast laughing all the time. At about 5.30 p.m., Mr. Preissell was flying his 35-h.p. "Y" Anzani-Blériot for eight minutes.



THE ROYAL FLYING CORPS.

ON the 18th inst., the following appointments to command the Royal Flying Corps were officially announced:—

To be Commandant of the Central Flying School—Captain G. M. Paine, M.V.O., R.N.

To be Commandant of the Naval Wing, Royal Flying Corps—Lieutenant (Acting Commander) C. R. Samson, R.N.

To be Commandant of the Military Wing, Royal Flying Corps—Captain F. H. Sykes, 15th Hussars.

At the same time, it was also announced that while he is so employed Captain Sykes will be granted the temporary rank of Major.

Captain Paine, who goes to Salisbury Plain to command the Central Flying School, has been in command of the Sheerness Torpedo School, and last week received his pilot's certificate, having qualified for it on a Short machine at Eastchurch.

Commander Samson has been in charge of the naval aviators at Eastchurch for some time, while Major Sykes has been flying at Farnborough.

Cross-Country Handicap (about 20 miles). First prize presented by Mr. Seymour Hicks.

| | Start. | H'cap. | Net Time. | Time. |
|---|---------|--------|-----------|-------|
| 1. Lewis Turner (50-h.p. Gnome-Howard Wright) | m. s. | m. s. | m. s. | |
| 2. B. C. Hucks (50-h.p. Gnome-Blériot) | Scratch | 38 | 9 | 22 32 |
| 3. W. H. Ewen (35-h.p. Anzani-Caudron) | 5 20 | 39 | 29 | 29 12 |

Grand Speed Handicap (12 laps—about 17 miles).

First prize presented by Mr. Teofani.

| | | | | |
|---|---------|----|------------------|---------------------|
| 1. Lewis Turner (50-h.p. Gnome-Howard Wright) | 13 17 | 30 | 23 $\frac{1}{2}$ | 30 23 $\frac{1}{2}$ |
| 2. B. C. Hucks (50-h.p. Gnome-Blériot) | Scratch | 34 | 30 $\frac{1}{2}$ | 21 13 $\frac{1}{2}$ |
| 3. W. H. Ewen (35-h.p. Anzani-Caudron) | 4 32 | 34 | 15 | 25 30 |

Altitude Contest, for the St. Ivel Challenge Trophy.

| | | |
|---|---------|-----------|
| 1. W. Moorhouse (50-h.p. Gnome-R. and M.) | | 5,900 ft. |
| 2. B. C. Hucks (50-h.p. Gnome-Blériot) | | 4,100 ft. |



AEROPLANE HANDICAP AT BROOKLANDS.

THE following are the entries for the handicap which has been arranged to take place at Brooklands on Whit-Monday. The event will be run in two heats and final. The first heat will be started at 5.20 p.m., the second heat at 5.40 p.m. and the final at 6 p.m.

| | | |
|--------------------------|---------|-------------------------|
| Mr. T. Sopwith | | Blériot Monoplane. |
| Mr. T. Sopwith | | Burgess-Wright Biplane. |
| Mr. R. L. Charteris | | Hanriot Monoplane, |
| Mr. C. Gordon Bell | | Bristol Monoplane. |
| Mr. E. Hotchkiss | | Bristol Biplane. |
| Mr. C. L. Pashley | | Humber Monoplane. |
| Mr. A. V. Roe | | Avro Monoplane. |
| Mr. M. Ducrocq | | Hanriot Monoplane. |
| Capt. H. F. Wood | | Vickers Monoplane. |
| Mr. W. B. R. Moorhouse | | Blériot Monoplane. |
| Mr. N. S. Percival | | Percival Biplane. |
| Mr. Herbert Spencer | | Spencer Biplane. |
| Mr. C. P. Pizey | | Bristol Biplane. |
| Lieut. J. C. Porte, R.N. | | Deperdussin Monoplane. |



An exhibition flight at Hendon by Mr. Grahame-White in the Farman 'bus, as seen from outside the entrance to the aerodrome. Note one of the 3-horsed conveyances which are now regularly plying for passengers to and from the meetings.

AIR EDDIES.

To be looked upon as a most extraordinary type of mortal is a thing that the flying man enjoys to some extent even to-day. True, this manner of treatment is not anywhere near so prevalent as in the early days. But the fact remains that it is not yet totally extinct. To be regarded as a representative of the nether world or some similar personage is surely rather new. That, however, is what happened to Compton Paterson in South Africa. He was flying across country, and having missed his way descended near a small and more or less isolated cottage to find out his true direction.

He didn't at first stop his engine, for he naturally had in mind the difficulties of starting a Gnome with the help of assistants that had never before seen an aeroplane—let alone a motor of that kind. However, as he could not induce, even after about ten minutes' persuasion, anyone to approach within fifty feet of the machine, he switched off and clambered down.

To his surprise, they turned round and ran for their very lives. By the time Paterson had followed them to the cottage, the doors had all been bolted and the blinds had all been drawn down.

Prolonged knocking ensued, and after a considerable delay the door opened just sufficiently to give a glimpse of a very frightened face. It was not until he had inspired confidence by throwing off some of his flying kit, showing that he was indeed a human being, that they answered his questions and sent him on his way rejoicing.

In connection with Vivian Hewitt's flight over the Irish Sea, it was rather a curious coincidence that his Blériot was brought back to England in the same scenery box that had just previously taken Mr. Robert Loraine's effects for "Man and Superman" over to Ireland. Mr. Loraine, of course, was the first one to attempt this flight—and he came within a hair's breadth of succeeding too!

By-the-bye, Hewitt's Irish flight brings back to mind his first trial of his newly delivered Gnome-Blériot at Brooklands. He started off beautifully, but, almost before he knew where he was, he had risen to about 1,000 feet and was well the other side of the railway. He had to turn round and get back somehow, but how to do it he did not quite know, for he had then a righteous horror of banking his machine even a tiny bit. However, by giving the tail a series of little waggles with his rudder, he made the machine turn gradually—very gradually indeed—for it was a turn of about five miles diameter.

He must have gone some fifteen miles before he got the machine heading nicely for the aerodrome again. But he "made good" over his finishing *vol plané*, for he came down splendidly from 1,500 ft.

This little incident was quickly seized on to chip Hewitt over his last big flight. The explanation was put forward that having started, he couldn't turn round to get back, so he jolly well *had* to cross the Irish Sea.

But it's rather a curious thing that although he has been flying most actively up Rhyl way, he has not yet officially qualified for his *brévet*. It surely cannot be that he has not yet faced the initial difficulty of the right-hand turn. So we must put it down to the fact that Aero Club observers must be scarce in that part of the globe.

Cows, those animals from which we derive our daily supply of milk, would seem to have little connection with aviation. But the fact remains that were it not for one especial cow we should have seen Ewen's Caudron monoplane flying at Hendon long since. As it happened, this particular specimen took it into her head to break into Ewen's shed at dead of night and scratch her side on the trailing edge of one of that monoplane's wings. Now we shall have to wait until Ewen gets another wing over from Crotot before we see this interesting little machine in its proper element. And all through a cow, too.

It's quite a joy to the eye to see Hubert back in England again, fully recovered from the nasty smashing up he sustained while flying in connection with the Aerial Post. He looks quite cheery and well, and from his walk one would never suspect that he had had a really serious smash, although one leg, his left, is just a shave shorter than

the other. But that is not really the main issue. The chief point is this, that his feet have by no means suffered from a loss of temperature, for he was up again for quite a nice little flight on one of the Grahame-White Farmans on last Sunday evening—his first trip since the smash. It is almost certain that he is going to remain over here and continue with his flying. Shall we see him aerodrome flying, cross-country flying or hydro-aeroplane flying, I wonder?

It is also good to see Mr. R. F. Bell back again in the aeroplane world. After being prime factor in the since almost defunct Aeroplane Supply, he quitted aviation for motoring, taking up with Métallurgiques, Ltd. Now he is connected with the British Deperdussin Aeroplane Co., Ltd., and its allied concern, the General Aviation Contractors, Ltd., in the capacity of sales manager. We must congratulate them on getting such an enthusiastic worker.

From what I have heard from Maurice Ducrocq and from what I have read in some of the French newspapers, Sippe's flying on the new Hanriot monoplane at Rheims has been of number one order. It is not often that our brother journalists across the Channel speak highly of the qualifications of any of our English pilots—they seldom trouble to expound on the virtues of their own—but they certainly have done so in this particular instance.

At the time of writing, I hear that he has flown every "bus" in commission at the Hanriot establishment, and has done wonderfully well on their latest product in particular.

Sydney Sippe is now definitely engaged as chief pilot to Hanriot (England) Limited, and, as one who knew him when aviation here in England was quite a little infant, I must indeed congratulate him on his appointment. He will not be back over here just yet. He plans to stay at Rheims for another week or so to get more practice on the new machine. When that is over he reckons to bring the new monoplane with him, maybe by air.

From what I can make out, Mr. L. Seymour Metford (of Blériot's) seems to have had an unusually vigorous time of it of late. Not only has the *Daily Mail* run off with their school instructor, Salmet, but M. Chéreau, the head one at Belfast Chambers, has been laid up for the past week or two.

To instruct pupils from four o'clock in the morning till eleven, to attend to all the correspondence and business of the firm from eleven till three in the afternoon, and to pass the rest of the day until darkness sets in again teaching pupils is, to me, a particularly healthy programme. However, working at this rate after all can't do one much harm. It is a great deal better to wear out than rust out!

By the way, I'm happy to know that M. Chéreau has got over the worst of his indisposition and no doubt will have resumed his normal activities by this time.

Major Robert Fisher desires us to tender his thanks to all those kind friends in the aviation fraternity who sent expressions of sympathy on the death of his son—poor "E. V. B." So numerous have been the kind messages that it is impossible for him to acknowledge each individually.

I have heard, and on very good authority too, that it is quite possible we may see Vedrines on his record-breaking Deperdussin monoplane flying over here in England before very long.

Hydro-aeroplane experiments are being carried out by the Marquis of Anglesey and Viscount Ingestre in the Menai Straits.

Just as these notes go to press it comes to me that Mr. Grahame-White, our most popular airman, is getting married—and very shortly, too. The bride is Miss Dorothy Taylor, only daughter of Mr. and Mrs. Leroy Taylor, of 784, Fifth Avenue, New York, and the happy pair will be joined as one at Widsford Church, Chelmsford, on Thursday, June 27th. The reception will be held at Hylands, the residence of Sir Daniel and Lady Gooch. Hearty congratulations all round—and may Claude's flying spirit never dull.

"OISEAU BLEU."

MILITARY AEROPLANE COMPETITION.

SUPPLEMENTING the preliminary announcement of the Military Aeroplane Competition which was issued just before Christmas last, the War Office have just published a *communiqué* covering the rules and regulations of the competition. Both these documents we publish in full below. There has been some slight modification with regard to preliminary tests, but otherwise the general scheme of the competition is as first announced. It will be seen that entries have to be sent in by June 15th, while the machines have to be delivered at Lark Hill on or before July 15th, no date being given as to when the competitions will actually take place.

There are also rules and regulations containing the usual clauses of detail relating to definitions, responsibilities, &c., &c. In regard to the minor, although, nevertheless important, modifications in the main text, to which it is desirable to draw special attention. In the first place we would direct our readers' notice to paragraph 3, which contains an important proviso that machines will not necessarily be disqualified merely because they fail to comply with some of the conditions set forth in the original document was that published in our issue on December 23rd, 1911. This means, in other words, that the authorities responsible for the building up of the Royal Flying Corps are to have an opportunity of exercising their discretion to a certain extent, instead of being bound hard and fast by conditions that, having once appeared in black and white, cannot be departed from. It is obviously a sensible clause, and finding it in a Government document like this leads us to feel a desire to congratulate those responsible for its inclusion.

But it is obvious that the authorities must have some fixed signposts to go by, and, in consequence, the present conditions include a revised list of essential minimums, for the details of which we refer our readers to para. 6. Most of the clauses there recapitulated are the same as those in the original conditions, as, for instance, that the machine must be capable of accommodating a passenger, be capable of lifting a live load of 350 lbs., and be capable of a speed of not less than 55 m.p.h. In the original document the speed was specified as "in a calm," whereas what was evidently meant by the phrase was "air speed," which is the term now used; the speed will of course be measured with and against the wind.

Of the clauses that have been recapitulated as essential minimums, only one has been altered materially. This relates to the necessity of attaining an altitude of 4,500 ft., which is still essential but no longer necessary to be maintained for an hour. The height at which the machine must fly for an hour is now reduced to 1,500 ft. This, again, is a very sensible modification, because it is not every pilot who is so fond of high altitudes that he would stay aloft at 4,500 ft. for an hour without inconvenience, and there is no need to handicap the machine by imposing a condition that is primarily a strain upon the pilot. Indeed, we are a little inclined to question whether some of the entrants would readily be able to find pilots willing to carry out this particular condition in its original form.

With these remarks we now leave our readers to peruse the documents, as published below, for themselves.

1. The Military Aeroplane Competition, 1912, will be held by the Military authorities. The prizes to be competed for are as follows:—

A. Prizes open to the world for aeroplanes made in any country.—1st prize, £4,000; 2nd prize, £2,000.

B. Prizes open to British subjects for aeroplanes manufactured wholly in the United Kingdom, except the engines.—1st prize, £1,500; two 2nd prizes, £1,000 each; three 3rd prizes, £500 each.

No competitor to take more than £5,000. The War Office to reserve the right to vary the proportions of totals under A and B between the various prizes if the merits of the machines warrant it, or to withhold any prize if there is no machine recommended for it by the Judges Committee.

The War Office to have the option of purchasing for £1,000 any machine awarded a prize.

The owners of 10 selected machines which are submitted to and pass all the flying tests and are not awarded a prize to receive £100 for each machine so tested.

Oil and petrol will be supplied free for the tests. Those competitors who desire to use their own fuel and lubricant shall state in writing the make and constituents of each fuel and lubricant.

2. The conditions required to be fulfilled by and the specification for a military aeroplane were published in December, 1911.

[These two papers which were then published under the titles "Conditions laid down and Prizes offered by the War Office for a competition to fulfil the requirements of the accompanying specification for a Military Aeroplane," and "Specification for a Military Aeroplane," are hereinafter referred to as M.A.C. Form A and M.A.C. Form B respectively.]*

* See FLIGHT December 23rd, 1911, p. 1109.

3. An aeroplane will not necessarily be disqualified for failing to comply with the conditions required to be fulfilled by a military aeroplane (M.A.C. Form A), but these conditions, as modified by paragraph 6 of this paper, and the "desirable attributes" mentioned in paragraph 14 of the "Specification for a Military Aeroplane" (M.A.C. Form B), will form the main basis on which the Judges Committee will decide the relative merits of the competing machines.

4. *Packing and date of delivery.*—Each aeroplane entered is to be delivered packed in a strong case or crate suitable for distant transport by rail and sea. The aeroplane is to be complete within the case (except for re-erection from the packed condition) and is to be delivered on or before 15th July, 1912, at the Army Aeroplane sheds at Lark Hill, near Amesbury, Wilts. Arrangements will be made by/at the expense of the War Office for the transport of aeroplanes from Amesbury Station to Lark Hill if desired and if notification is received by the Secretary, Judges Committee, on or before 1st July.

5. *Standardization of parts.*—The examination of aeroplanes for standardization of parts in accordance with paragraph 11 of the "Specification for a Military Aeroplane" (M.A.C. Form B), will be proceeded with immediately after delivery. The competitor shall be represented and shall afford all facilities for this examination. To this end the submission of drawings by the competitor is desired at the time of delivery of the aeroplane.

6. *Preliminary tests.*—Before permitting any machine to proceed further with the Competition, the Judges Committee will make a preliminary decision based upon the conditions contained in paragraphs 2, 3, 4 and 9 of the "Specification for a Military Aeroplane" (M.A.C. Form B). For this purpose these conditions shall be modified to read as follows:—

The aeroplane should satisfactorily and without being damaged in any important part in alighting or otherwise—

a. Carry a live load of 350 lbs. in addition to its equipment of instruments, &c., with fuel and oil for 4½ hours.

b. Provide accommodation for a flyer and observer, and the controls should be capable of use by either flyer or observer.

c. Fly for 3 hours loaded as in Clause (a) and attain an altitude of 4,500 feet. Maintain a height of at least 1,500 feet for 1 hour.

d. The rate of climbing shall average not less than 200 feet a minute for the first 1,000 feet.

e. Attain an air speed of not less than 55 m.p.h. loaded as in Clause (a).

Competitors will notify the Judges Committee when they intend to demonstrate their compliance with c, d and e, stating in writing which test is contemplated. A reasonable period, based on the amount of suitable weather for flying experienced, will be allowed by the Judges Committee for carrying out these tests. The Judges Committee will display a signal at all times when, in their opinion, the weather is suitable for flying, but competitors will be in no way bound to fly in, or confine their flying to, hours so notified as "suitable."

7. *Notices and communication with Judges Committee.*—Any communication required to be made in connection with this competition shall be addressed to the Secretary of the Judges Committee (Military Aeroplanes), The War Office, Whitehall, London, S.W., prior to 1st July, 1912, and thereafter at an address to be notified to the competitors by the War Office. All letters relating to the competition are to be marked on the envelope and on the letter in the left top corner with the words "Aeroplane Competition, 1912."

8. *Entries.*—Entries will be received by the Secretary of the Judges Committee on or before the 15th June, 1912.

9. Entries shall be made in writing, on the attached form issued for the purpose by the War Office, stating the name and address of the entrant, and the particulars of the aeroplane, engine, &c., in the spaces indicated for the purpose. A separate entry form shall be properly filled in for each aeroplane entered.

10. The entry shall be signed, in the case of a corporate body, by the secretary or other person fully empowered to sign the name and bind the corporate body concerned.

11. *Deposits.*—Each entrant shall forward with his entry or entries a deposit of £20, returnable after the Competition in the event of the aeroplane or aeroplanes entered by him being duly delivered to take part in the Competition.

12. *Refusal of entry.*—The Judges Committee may refuse any entry by sending notification of such refusal without reason given.

13. *Vouchers.*—A competitor entering for the United Kingdom Prize shall produce such vouchers, invoices and certified declarations as may be necessary to show that the whole of the various parts constituting the aeroplane, excepting only the engine, have been made and assembled in the United Kingdom.

14. *Flyer's name and number to be declared.*—Every entrant shall state in writing the name and certificate number of the person who is to fly his aeroplane, not less than five days before the date of

delivery of aeroplane. In the event of its being desired to change to a different flyer, permission must be asked for in writing (stating the name and certificate number of the proposed substitute) from the Judges Committee.

15. *Penalty for false statement.*—Any entry containing any statement, which in the opinion of the Judges Committee is misleading, may be declared null and void.

16. The Competition will take place in accordance with the published Rules and Regulations attached.

Rules and Regulations.

1. *Definitions.*—The word "Competitor" shall include any person or corporate body making entry for or taking part in the Competition, and shall include the flyer, mechanic or passenger, other than the official observer.

2. The word "Passenger" shall include the flyer and mechanic, and shall mean a person of not less than 18 years of age and weighing not less than 132 lb., provided that any deficiency in weight may be made up by means of ballast or by excess of weight in the other passenger.

3. The word "Aeroplane" shall be inclusive of the entire apparatus, as submitted for test, including the engine and usual accessories.

4. The word "Person" shall include one or more persons or a corporate body.

5. Every "Competitor" shall be presumed to be acquainted with and shall submit to and be bound by these Rules and Regulations, and any further instructions issued hereafter in regard to the Competition. Any such further instructions shall be supplementary to and shall not supersede these Rules unless with the consent of the Judges Committee. All words herein defined shall in all such instructions be deemed to bear the same meanings as herein expressed unless the contrary is specifically declared in such further instructions.

6. *Entrant responsible for Flyer.*—The entrant shall be responsible for all acts or omissions on the part of his flyers, passengers, and mechanics, and each or any may be held responsible for any infraction of these Rules.

7. *Competitors must be Registered.*—No flyer shall be allowed to fly an aeroplane in the Competition unless he be a holder of the Flying Certificate issued by the Royal Aero Club, or such foreign certificate as is recognized by it. Nevertheless, any individual flyer may be refused permission to fly in the Competition without any reason being assigned.

8. *Change of Flyer.*—Each aeroplane shall be flown throughout the Competition by the same person. If a change of flyer is necessitated the consent of the Judges Committee must be obtained after reasons given in writing and signed by the competitor.

9. *Identification Marks.*—Every aeroplane shall, during the Competition, carry in a conspicuous place the numbers or other identification marks allotted to it by the Judges Committee.

10. *No Advertisements to be Carried.*—No conspicuous advertisement or trade sign, other than small plates carrying the name of the aeroplane or of the maker, shall be carried, and no advertisement shall be distributed from any aeroplanes during the Competition.

11. *Overtaking and Passing.*—Passing, overtaking and crossing shall be governed by the rules issued separately.

12. *Dangerous Flying.*—Flying considered by the Judges Committee to be dangerous to other competitors or to the public will involve such penalties to the competitor, including possible disqualification, as the Judges Committee may see fit to impose.

13. *Enclosure.*—No person except the officials, the flyers and their assistants, for whom a strictly limited number of personal permits must be obtained, shall be allowed within the enclosures and trial tracks except with the special permission of the Judges Committee.

14. *Postponement or Abandonment.*—The Competition and each item thereof may be postponed or any item abandoned at the discretion of the Judges Committee, and in the event of such postponement or abandonment no competitor shall, except as provided herein, have any claim against the Judges Committee or the War Office.

15. *Control of the Competition.*—The supreme control of the Competition will lie with the Judges Committee. Officials will be appointed by the Judges Committee.

16. *Duties and Powers.*—The Judges Committee shall decide the winning and the placed competitors. Their decision shall be final and without appeal. Nevertheless, nothing herein shall prevent the Judges Committee from correcting a mistake. No decision of the Judges Committee shall give any claim to a competitor who is subsequently shown to have failed to observe these Rules, or who shall have been disqualified or otherwise have been ineligible.

17. *Interpretation.*—The Judges Committee shall alone have power to interpret, alter, amend or cancel any of these Rules and the other instructions issued relative to the Competition, and to forego any test or any requirement, or to enforce other or further requirements in particular cases, either arbitrarily or with a view to obtaining the information necessary to make their award.

The following particulars have to be filled in on the entry form, which, as usual, contains a clause indemnifying the Secretary of State for War against any damage done to any property of the War Department, or to any fellow competitor or any third party :—

5. Brief description, whether biplane, position of propeller, price, &c. 6. Intended flying speed in m.p.h. 7. Smallest gliding angle with the horizon which the competitor considers that he can safely achieve. 8. Weight of entire aeroplane empty in lbs. 9. Whether the aeroplane can stand still without being held while the engine is running. 10. Whether the engine can be started from on board the aeroplane by the flyer in charge in the supposed absence of the passenger. 11. Make, nominal h.p., number of cylinders, bore and stroke in m.m. 12. Brake h.p. given on the bench throughout a 6 hours' run unsilenced. 13. Mean speed of the engine in r.p.m. for test 12 above. 14. Weight of engine complete in lbs. 15. Whether the engine is air or water cooled. 16. Fuel consumption per hour during test 12 above in lbs. 17. Total oil put into engine for and during test 12 above in lbs. 18. Capacity of petrol tank in gallons. 19. Capacity of oil tank in gallons. The particulars given above (paragraphs 5—19) are accurate, to the best of my/our knowledge and belief.



THE "DAILY MAIL" TOUR.

M. SALMET started off on his thirteen weeks' tour of South-West England on the 16th inst., when he flew from Wormwood Scrubs to Reading. The Biscuit City gave him an enthusiastic welcome, and seemingly all the inhabitants turned out for the aeroplane's arrival. It was intended that he should come down on the Sports Ground, but owing to the *remous* he deemed it too dangerous to attempt this and so landed in a meadow close to the Thames. He had made a ten minutes' stop at Taplow on the way. He left Reading on Friday afternoon and after flying for an hour and eight minutes landed at Marlborough, staying there for fifty-five minutes and then continued on to Bath which was reached at half-past seven. During the afternoon the town crier of Marlborough, dressed in his picturesque costume and mounted on a bicycle, went round the town crying the latest news and as soon as word was received that Salmet was on his way there was a general exodus to the Common to await his arrival. It was the same thing at Bath, where it is estimated that

10,000 people saw the Blériot machine land. By that time the pilot was complaining of feeling tired owing to the strain of flying through the wind.

The journey was continued to Bristol on Saturday and there it had been arranged that M. Salmet should alight in the County Cricket Ground, but the troublous state of the atmosphere and the restricted nature of the ground induced him to go on, and skirting Bristol on the north, he eventually found a suitable landing place on a hillside at Mangotsfield. Although it was a somewhat lonely spot, it only needed a very short time for a large crowd to gather and give the aviator the same kind of welcome which he had experienced in the earlier stages. Monday was a rest day, and given up to the overhauling of the machine and its motor, while on Tuesday the journey was to have been continued to Newport and Cardiff, but rain and mist made it practically impossible to do any flying, and so M. Salmet remained at Bristol.



A Hydro-Aeroplane in Japan.

A NUMBER of flights were made by Atwater on his hydro-aeroplane at Yokohama on the 10th and 11th inst., the machine alternately alighting on the sea and on the land. Some of the trials were witnessed by members of the Imperial Family.

A Parseval Airship for Denmark.

IT is stated that a group of Danish financiers has offered to place at the disposal of the Danish Minister of War a sum of 30,000 crowns (£1,600) towards the purchase of a Parseval dirigible balloon for the Army.

THE DESIGN OF A SCOUTING AEROPLANE.

By BRIGADIER-GENERAL D. HENDERSON, C.B., D.S.O.

(Concluded from page 450.)

I HAVE been talking for a long time, and you may be wondering when I am coming to the subject of the lecture, the Scouting Aeroplane. There were a good many preliminaries to be cleared up first. But now having got so far as to give the opinion, which is very widely shared, that a real fighting aeroplane, for action against other aeroplanes, is certain to appear, and that before long, we can go on to discuss the probability of another type being used, and to guess at its probable characteristics. And in the first place I think we may safely say that the tendency for the moment is towards concentration in one type, owing to a certain limit that has been reached in the matter of speed. Racing aeroplanes are always attaining speeds at which landing becomes rather a hazardous operation, and we cannot look for any very great increase in air speed until some method is devised of limiting speed on landing, or some new principle is evolved in the design of landing chassis.

At the same time, the speed of heavy machines, approximating to the strength and power which will be required for fighting machines, is constantly increasing. If, therefore, we can get a heavy fighting machine to reach the limit of speed for safe landing, there is not much room for the light unarmed machine until some means have been devised of increasing air speed while limiting speed on landing. I will admit that there is likely always to be a certain margin of possible speed in favour of a very light aeroplane in regard to this matter of landing. A bad landing may be less disastrous with a light machine than with a heavy one, and it is also possible, in an unfettered design, to minimise the danger to the pilot in the event of a smash on landing. It is, therefore, possible that when the limit of speed for the safe landing has been attained by fighting aeroplanes, this limit may be exceeded by scouting machines which are built to smash safely, if I may put it so. This method of attaining increased speed would, however, I imagine, be not very generally used, and it is by no means certain that the margin of speed thus obtained would justify the use of a purely scouting aeroplane against fighting machines. For the required speed of an aeroplane for purely scouting purposes is not a fixed quantity; it is relative; the speed must be higher than that of the enemy's armed craft; the greater the difference in speed between them the better. Therefore I would suggest that the first item in the list of requirements of a scouting aeroplane must be variable speed, for without that, or some entirely novel landing arrangement, I can see no place in war for anything except the fighting craft.

If, however, the landing difficulty can be surmounted, then there is a very important rôle for the scouting machine. For there seems no reason to doubt that a machine built specially for speed can be made materially faster than one built specially for fighting; in the case of the scouting machine there are no real limitations of design. You may have any kind of screw or propeller you like; you may hang half a dozen propellers round the machine if you like; you can have engines as powerful as you like if only they are not too noisy; you may carry a passenger or only a pilot; you may carry weapons or go unarmed; in design generally you have a free hand. It seems to me that, under such conditions, it is axiomatic that such a machine can be made faster than the fighting aeroplane, the design of which is limited in so many ways.

The main use of the scouting aeroplane will probably be for preliminary reconnaissance, to mark down large bodies of troops, to observe changes in their disposition; perhaps, also, to observe the dispositions and movements of the enemy's aeroplanes. The light fast machine would be used for these purposes because of its speed, which would give the pilot a good chance of escaping such hostile machines as were sent against it. If a solitary fighting machine were sent on such an errand, it would probably be met by a superior force of aeroplanes of its own type, and it would be too weak to defeat them, and would have no advantage in speed by which to escape them. When fighting aeroplanes are used they should be sent out in such strength as will give them a fair chance of defeating or holding off the hostile machines that are likely to be brought against them; they are not for solitary use.

In dealing with an aeroplane as a means of transport for a scout, one striking advantage of air reconnaissances becomes apparent. On the ground, a scout who is discovered by a superior force has only two dimensions on which to escape, he is confined to the surface of the earth. The flyer can escape in three dimensions, and if his climbing power is superior to that of his adversaries, he will be very hard to catch. [I do remember, however, once in South Africa, on reconnaissance, I thought the enemy's attentions a little pressing, and spent the night in a coal pit. The third dimensions, perhaps, came in there.]

I have taken speed first, because it seems to be the most important of the attributes of a scouting aeroplane. Again I would say that

speed is only relative, and that a sufficient speed means a sufficient margin of speed over your adversaries. It does not seem probable that the problem of speed will reach finality for some considerable time.

The three other requisites I have mentioned are silence, invisibility and manœuvring power. Manœuvring power is, in so far as the machine is concerned, a matter of stability and efficient control; it is also a relative quantity and the standard will depend on the success which designers may achieve in overcoming the clumsiness of the heavier fighting machine.

Invisibility and silence, on the other hand, are positive virtues; and the nearer we can approach to complete invisibility and perfect silence, the better. Invisibility may be approached by judicious arrangement of surface material and colour; and the prevention of noise is not a very complex engineering problem.

The design for a scouting aeroplane, therefore, should make provision for the four essentials, speed, which includes climbing speed, manœuvring power, silence and invisibility, and should give certain facilities for observation.

In selecting these attributes as essentials, I have not been guided by any knowledge either of aeroplane construction or of the art of flying. My experience in both directions is paltry, and I disclaim entirely any right to speak from either point of view. The subject has been attacked solely from the point of view of reconnaissance in war. Bearing this in mind, we might now consider some attributes which I would term non-essentials.

A certain possibility of observation is an essential; the scout must be able to see something; but an absolutely unrestricted view is a non-essential. It is desirable, certainly, but only if it does not interfere with another essential. There are machines now existing which give a practically perfect view, but lack the other essentials of a scouting machine, and I think any insistence on this attribute would tend to cramp design. To insist on an absolutely unrestricted view, to the detriment of speed or manœuvring power, would be like sending a scout out on foot carrying a step-ladder in order that he might set it up, when he found the enemy, in order to get a good view.

Another non-essential, more or less desirable in a scouting machine is power of rising from rough or sticky ground. This is convenient, of course, but hardly of first importance. For a machine starting from its own lines the most careful preparations can be made and, with regard to restarting a machine which has been forced to descend in the enemy's lines, I think it safer for the present to assume that such a mishap implies the failure of the enterprise as an aerial reconnaissance, and that bad starting ground must be looked on in the same light as a broken chassis or a defective petrol pipe. The scout in such case must be prepared to abandon his aeroplane and make the best of his way home by other means. Many a man has started on reconnaissance on his good horse and has come back on his bad feet, and aeroplane scouts need not expect to escape similar trials. Of course, if we can get a machine to rise from a snipe-bog, so much the better, but it cannot be called an essential.

Suitability for landing well, on the other hand, is so much of an essential that I have looked upon it as a preliminary to the very existence of a separate type of scouting machine. A good gliding angle is a convenience, and an additional safety; and I am inclined to venture the opinion that, mathematically, it is closely connected both with speed and manœuvring power, and will improve proportionately to these two attributes. If, however, I should be wrong in this view, a flat gliding angle is still a non-essential and must not be sought after to the detriment of more important requirements.

Protection, or armour of any kind for the aeroplane is at present, I should guess, a non-essential. The scout must trust to his superior mobility, and there can be no doubt, I think, that any serious attempt to provide protection would impair mobility.

The question of whether a scouting aeroplane should carry two men or only one is to my mind a non-essential. If two men can be carried without detracting from speed and climbing power, then, undoubtedly it is an advantage to have an observer with nothing to do but observe. On the other hand, it is better to have a reconnaissance succeed with one man than fail with two. I will leave it at that.

The proceedings of a scout in war are, of course, infinitely varied, according to the circumstances under which he finds himself. Let us consider, however, for a moment, the operations of a scout who has been told to verify the positions of certain of the enemy's troops, and let us suppose that a circle of fifty miles by aeroplane will be necessary.

He might very well start before dawn, get his altitude, and circle about his own lines until it was clear enough to observe accurately. Then, with noiseless engine, and aeroplane coloured so as to show as

little as possible against the sky, he will make for the enemy's position. It is quite possible that he may complete his half-hour trip without being discovered. Or he may be discovered from the ground, in which case he ought to have finished his reconnaissance before any fighting machine could climb sufficiently to put him in danger. Or he may be discovered by an enemy in superior force already in the air, in which case he will possibly, though not certainly, have to retire with his work incomplete. Or he may be intercepted, in which case a circuitous chase or a climbing contest may ensue. It seems to me, however, that such a scout will have a good chance of escaping the enemy's observation altogether, and I can see a great prospect of success for reconnaissance conducted in this fashion.

There is one point that I am sure has occurred to many of you, on which I have not touched, that is, the case of two scouting aeroplanes, of similar type, opposing one another in the air. I can only say that, judging by the action of single scouts on the ground, it is unlikely that conflicts will occur very frequently between such craft. Their business is scouting, not fighting, they are not equipped for fighting; if they fight they are likely to attract undesirable attention to themselves, and if they are determined to fight they must get to very close quarters. If the machines are at all equally matched in speed and handiness, the scouts might manoeuvre round each other for an indefinite period, missing each other with pistols, or endeavouring, and failing, each to give the other his wash. The use of weapons on a craft not designed for it will be very difficult, and the



A Novel Meteorological Station.

PYESTOCK chimney, called by many "Government Folly," has at last been put to some use. As many know, a few years back this well-known landmark near Farnborough was built for a rubbish destructor, but was never used. Mr. Mervyn O'Gorman, quick to behold the possibilities of putting a useless thing to some practical use, is making the chimney into a meteorological station. The method adopted for getting a rope over the top for lifting the materials for construction is rather interesting. A small torpedo-shaped balloon was let up inside with a cord attached, and when clear of the capping, was blown away by the wind until enough

probability of a scout determining on self-destruction in order at the same time to destroy his enemy is remote.

I have tried to suggest to you the lines on which the requirements of a scouting aeroplane should be considered. Very likely you may not agree with me on all or on any of the points I have put forward. But this lecture will have served its purpose if only those designers who have heard it will be able to satisfy themselves not only that they disagree, but why they disagree.

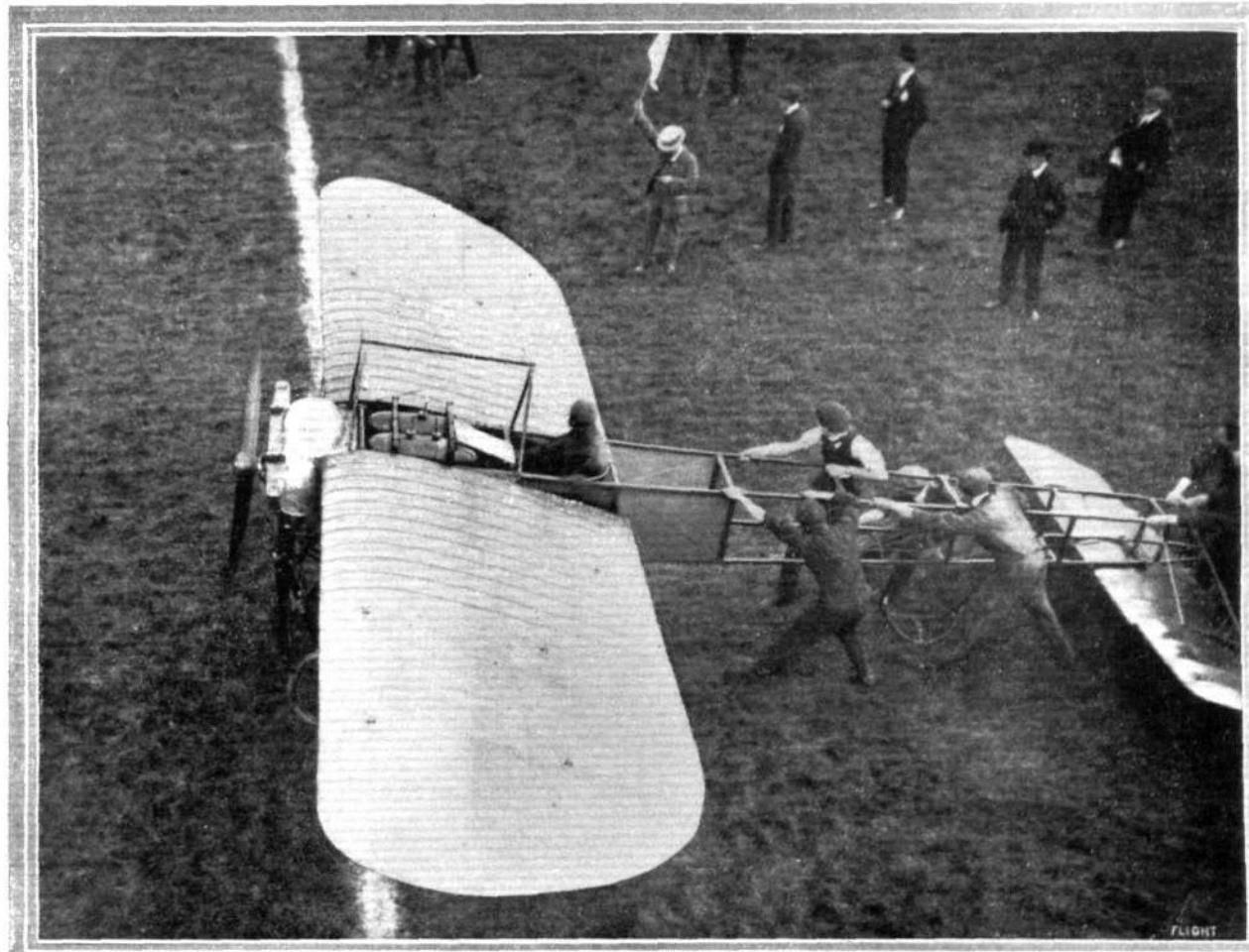
In many conversations I have had with people connected with flying, when discussing different types of aeroplanes, I have heard different machines described as "the very thing for scouting," or "splendid for reconnaissance," and I have said "yes, splendid," without much enthusiasm. In nearly every case, the obvious virtue in the machine which was pointed out to me was what I call a non-essential, and speaking of reconnaissance generally, inexperienced people are apt to attach undue importance to non-essentials. I have tried to give you the benefit of a small experience of scouting on the ground, but I am quite alive to the possibility that such experience may be a poor guide to the art of scouting in the air. In the air it is possible that experience will prove all our theories fallacious. As the old scout said, "the only way to learn reconnaissance is to go out scouting, and the only way to learn to scout is to go out on reconnaissance." But until we can get our experience of reconnaissance in the air, we must try to utilise our experience of other kinds of reconnaissance, and work out our salvation by thinking, and by discussing, and by trying experiments.



line was out to reach the ground. The balloon was "volved" by means of a few revolver shots, and eventually came down to mother earth. A thicker line was now attached and hauled over the chimney, in its turn being superseded by a rope strong enough for lifting the necessary tackle. Very correct atmospheric conditions should be obtained, as the top of Pyestock is about 420 feet above sea-level.

The German Experimental Laboratory.

WITHOUT any opposition the Reichstag on Monday in Committee approved the grants of £10,000 for the foundation of an Experimental Institute, £2,500 for the working expenses this year.



Waiting the signal to start in the cross-country handicap at Hendon, as seen from the Judges' box. Mr. B. C. Hucks on his Blériot awaiting the dropping of the flag.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Public Safety and Accidents Investigation Committee.

A FURTHER meeting of this Committee was held on Tuesday, May 21st, 1912, when there were present:—Col. H. C. L. Holden, C.B., F.R.S. (in the Chair), Mr. A. E. Berriman, Mr. G. B. Cockburn, Mr. F. K. McClean, Mr. W. O. Manning, Mr. Alec Ogilvie, Mr. Mervyn O'Gorman, Sir Charles D. Rose, Bart., M.P., Major-General R. M. Ruck, R.E., and the Secretary.

An inquiry was held into the circumstances of the fatal accident at Brooklands on May 13th, 1912.

The reports of the various eye-witnesses were considered, and Lieut. J. C. Porte, R.N., Mr. A. Dukinfield-Jones, Mr. L. Howard-Flanders, and Mr. F. May kindly attended and gave evidence. The meeting was adjourned till the following evening.

British Empire Michelin Cup No. 1.

(Under the Competition Rules of the Royal Aero Club.)

The winner of the prize of £500 for the year 1912 shall be the competitor who, on or before October 31st, 1912, shall have remained the longest time in the air on an aeroplane in one flight without touching the ground. The flights may only be made between the hours of sunrise and one hour after sunset, and in order to qualify for the prize the competitor must make a continuous flight of at least five hours.

The entrant, who must be the person operating the machine, must be a British subject, flying on a British-made aeroplane, must hold an Aviator's Certificate, and must be duly entered on the Competitor's Register of the Royal Aero Club.

Rules and entry forms can be had on application to the Club.

Paris to Eastchurch with a Passenger.

MR. GUSTAV HAMEL with Miss Trehawke Davies once more as passenger made another fine cross-channel trip on a Blériot two-seater monoplane on Tuesday. Leaving Issy at five minutes to six they ran into a fog soon after passing the Eiffel Tower, and after doing about twenty miles, landed at the first available spot, and waited for the mist to lift. A restart was made at two o'clock, and then they were brought down again at Amiens by a thunderstorm. After that had cleared they were able to continue to Hardelot, where a four minutes' stop was made to take on petrol and other supplies. On restarting the machine rose to a good height and was at once headed off across the Channel, passing over Dover about half past seven. Owing to the lateness of the hour it was decided not to make for London, as originally intended, but to fly across to Eastchurch, which point was safely reached, with the intention of continuing the journey to Hendon, and then on to Bath on the following morning, where Hamel was due to participate in the flying meeting there.

Belgium to Dover and Back via Calais.

A VARIATION was provided on Tuesday on the ordinary cross-channel trips which are now becoming quite commonplace, by Crombez, who on his Deperdussin monoplane started from Nieuport-les-Bains in Belgium, near to Ostend, flew down the coast to Calais, across the Channel to Dover and returned to his starting point without stopping. This is the second time only that the double journey across the Channel has been made, the first having been that of the Hon. C. S. Rolls on June 2nd, 1910. During the flight, a distance of about 150 miles was covered, while the time taken was 2 hours and 20 mins. Nieuport was left at ten minutes to nine and Crombez made a safe landing on his return at ten minutes past eleven. He arrived over English soil, to the east of Dover about half past ten and while circling there dropped a message which was picked up by a workman. This read, "Deperdussin monoplane, airman Crombez flying from Nieuport-les-Bains and return, is respectfully saluting England and her noble King."

Mr. Corbett Wilson Reaches Home.

ON Sunday week, Mr. Corbett Wilson achieved his ambition of flying to his home. He started from Enniscorthy, where he had landed after his flight across the Irish Sea, and reached Jenkinstown at 7 p.m. On the following day he treated the inhabitants of Kilkenny to a fine flight by flying round the city, and the news that he was out created quite a sensation in the district, causing a cessation of all work for the time being.

British Empire Michelin Cup No. 2, £600.

The contest for the current year consists of a cross-country circuit of about 186 miles. Competitors may choose their own course, which must be previously approved by the Club. The competition is now open, and the rules and entry form can be obtained from the Royal Aero Club.

Hurlingham Balloon Ascents.

The following events have been fixed for Hurlingham for this season:—

- Wednesday, June 12th ... Point-to-Point Race for a Cup offered by Mr. John Dunville.
- Saturday, June 22nd ... Long Distance Race for the Hedges Butler Challenge Cup.
- Saturday, July 13th ... Long Distance Race for a Cup presented by Mr. A. Mortimer Singer.

Members of the Royal Aero Club are admitted free to Hurlingham on these dates on presentation of their membership cards.

Presentation of Balloon.

Mr. A. Mortimer Singer has kindly presented to the Club his 50,000 c.f. balloon "Esperance."

This balloon will make private ascents from Hurlingham on Saturday, June 1st, and Saturday, June 8th. Members wishing to make an ascent are requested to send in their names to the Secretary together with a remittance for £4 4s. Seats in the balloon will be allotted according to priority of application.

166, Piccadilly. HAROLD E. PERRIN, Secretary.

The Whitsun Holidays at Hendon.

FROM the subjoined programme, it will be seen that given approximately decent weather there should be plenty of sport to be seen at Hendon during the Whitsun Holidays. Apart from the actual competitions which are arranged, there is also sure to be a large amount of exhibition flying by the many aviators who have made their headquarters at this aerodrome.

Saturday, May 25th, at 3.30 p.m.

1. Cross-Country Team Handicap.—Cups and 40 sovs.
 2. Monoplane Speed Handicap.—For the Barlow Trophy and 80 sovs.
 3. Altitude Contest.—For the St. Ivel Cup.
- Sunday afternoon, May 26th, exhibition flights by Mr. C. Grahame-White and competitors.

Whit Monday, May 27th.**12 noon to 2 p.m. Exhibition and Passenger Flights.**

1. Relay Race.—Cups and 40 sovs.
2. Passenger-Carrying Speed Handicap.—Cup and 35 sovs.
3. Cross-Country Race.—About 45 miles, for the Geisler Trophy and 140 sovs.
4. Grand Speed Handicap.—Cup and 50 sovs.

An Aerial Courier.

BEARING a letter from the Lord Mayor of London addressed to the Mayor of Bath, Mr. B. C. Hucks on Tuesday started off from Hendon at five minutes to six in the morning and an hour and three-quarters later landed safely at Bath. He flew mostly at a height of about a thousand feet and passed through rainstorms at Reading and Swindon.

Illness of Mr. Wilbur Wright.

THE sympathy of all interested in the aviation world over has been aroused by the news that Mr. Wilbur Wright has been stricken down with typhoid fever at Dayton, Ohio. A cable received on Tuesday from Dayton states that there has been no change in the patient's condition, which is critical but not hopeless, since Saturday.

For the Italian National Fund.

THE citizens of Venice have subscribed £1,200 which is to be placed in the hands of the Italian Minister of War for the purchase of a hydro-aeroplane. The Italian colony at St. Paulo (Brazil) have subscribed £4,000 for the purchase of aeroplanes for the Italian Army.

FROM THE BRITISH FLYING GROUNDS.

Brooklands Aerodrome.

ON Wednesday morning last week, Lieut. Parke made an early start on the Avro monoplane, taking her up to 700 ft., and landing after a spiral glide from that height. Later he was flying on the school biplane which is now going strongly again.

At the Bristol school, Hotchkiss was up with Anderson and Percival, the latter afterwards making some hops and short straights, solo. Hotchkiss then took Captain Henderson for several flights, finishing work with a short solo. During the morning, Gordon Bell, of R.E.P. fame, made his first appearance on the Bristol two-seater monoplane, putting in two flights of some 15 mins. each. Further flying during the day was prevented by a strong wind.

On Thursday the only flying done was on Sopwith's Howard Wright biplane, "The Family Tank," in the evening when both Sopwith and Raynham were busy with pupils until dusk.

After blowing hard all day on Friday the wind dropped to a dead calm about 6 p.m., leaving a good two hours of perfect flying weather. On the Bristol, Hotchkiss gave flights to Lieuts. Anderson and Percival, and Nesham passed for his *brevet* in good style at a height of 200 ft., making perfect landings. Lieut. Parke was out on the Avro school machine, followed by Mr. "Jerry" Chambers, who made some excellent straights. Parke was next up on the enclosed monoplane for 20 mins., at 1,000 ft., finishing with a spiral. This machine has recently had its controls geared down slightly and is now much better to handle. During the evening Moorhouse departed for Hendon, where he arrived without incident after a quick journey.

At the Sopwith school, Alston, Howell, and Powell all received instruction on the Howard Wright with Raynham, while Sopwith on the Burgess-Wright was flying for the first time with the 40-h.p. A.B.C. engine. The machine flew strongly at the first attempt with a passenger, and was considerably faster than it had been formerly when fitted with a Gnome. The Coventry Ordnance was flying in its usual excellent style, taking many passengers.

On Saturday morning the weather was far from ideal, but Hotchkiss was busy with pupils on the Bristol, and Raynham on the Burgess-Wright was similarly employed. Parke on the all-enclosed Avro monoplane made a good flight, during which he made an excursion in the Chertsey direction at an altitude of 600 ft. Bad weather prevented more flying until the afternoon. The first event on the programme was a "get off the earth" competition which brought out quite a record number of starters. In order to allow the machines to get away head into the wind, the start was made from the corner of the sewage farm, this arrangement being much appreciated by the spectators who thus obtained an excellent view of the flights. The following were the starters:—

G. Sabelli (Deperdussin monoplane), Lieut. Parke (Avro monoplane), H. Spencer (Spencer biplane), F. Wheeler (Avro biplane), E. Hotchkiss (Bristol biplane), T. Sopwith (Howard Wright biplane), F. Raynham (Howard Wright), T. Sopwith (Burgess-Wright biplane), F. Raynham (Burgess-Wright), T. Sopwith (Coventry Ordnance biplane).

Spencer proved to be the winner on the handicap, with Sopwith second and Raynham third, both flying the Howard Wright biplane.

In the evening the wind moderated sufficiently to allow the race to Chertsey to take place. The following took part in the event:—

E. Hotchkiss, Bristol biplane (handicap, 4 mins. 36 secs.); F. Raynham, Burgess-Wright (4 mins. 6 secs.); Lieut. Parke, Avro

biplane (3 mins. 30 secs.); Gordon Bell, Bristol monoplane (1 min. 24 secs.); T. Sopwith, Blériot monoplane (scratch).

Raynham, on the A.B.C. engined Wright, came in first, with Hotchkiss close behind, Parke on the Avro being third. In the late evening, Bulkeley and Percival were making straight hops on the Bristol, and Hotchkiss gave flights to Bettington and Arthur.



Mr. Hubert, who last week-end, having recovered from the bad accident which he sustained in connection with the Aerial Post to Windsor last year, indulged in a flight on the Grahame-White Farman 'bus at Hendon.

Sabelli, on the little racing Deperdussin, made a 20-minute flight about 700 ft. up, and Wheeler had a joy-ride on the Avro biplane for about 10 minutes.

On Sunday morning Bulkeley started early doing straights on the Bristol, but lost his bearings in a slight ground mist and settled down in a small pond by the railway straight. The machine hit the



The all-steel Blackburn monoplane that has recently arrived at Brooklands aerodrome.

bank and left the under-carriage in the pond and settled down on the bank, doing very little damage and leaving the pilot unhurt. Lieut. Bettington was rolling on the monoplane as also was Arthur. Wheeler made a good flight on the Avro over towards Weybridge and Darracq put in some hopping. In the afternoon a bomb dropping contest was held, Hotchkiss, Spencer, V. Parke, Wheeler, Sopwith and Raynham entering. Each competitor had to drop 3 bombs from a height of 100 ft. The one who made the smallest aggregate distance being the winner. Hotchkiss, on the Bristol biplane came in easily first, with 26 ft.

While this competition was in progress, Moorhouse appeared on his monoplane about 4,000 ft. up, having come over from Hendon, and landed after a long spiral-glide. In the evening another cross-country race took place. This time, however, the course was not to Chertsey as before, but twice round the big mill, which stands half way out in that direction. This arrangement proved most satisfactory as it gave the spectators a close view of the machines half way through the race. The starters were:—E. Hotchkiss, Bristol biplane (handicap, 4 mins. 30 secs.); Lieut. Parke, Avro biplane (4 mins. 12 secs.); Gordon Bell, Bristol mono. (3 mins. 30 secs.); W. Moorhouse, R. and M. mono. (3 mins. 30 secs.); T. Sopwith, Blériot mono. (scratch).

The first home was Sopwith, quickly followed by Hotchkiss and Parke both of whom were, however, disqualified for landing before the finishing line, giving place to Bell and Moorhouse. The two latter flew neck and neck throughout the race Bell only gaining a few yards on the last turn. All credit is due to Mr. Handasyde whose excellent handicapping results in such close races. School work was continued until dusk at the Bristol, Sopwith, and Avro establishments. At the last school Kama Smith took his first lesson and Darracq did good straights.

On Monday morning Raynham was taking Capt. Howell, Powell and Hedley round for many circuits. On the Deperdussin, Harrison, a new pupil, was rolling, and Sabelli and Lieut. Gill were each on the racer for a considerable time. At the Bristol school Percival early put a stop to further work by omitting to flatten out on landing from 70 ft. The result was a completely demolished chassis, elevator and extension.

On Tuesday early, the Vickers was doing circuits with both Macdonald and Capt. Wood up. It showed an excellent turn of speed and appeared to lift well. At the Deperdussin school Capt. Dawes was out on the taxi doing some sharp and well banked turns rather too near the ground, however, for the inside wing tip. Harrison was also rolling, and Sabelli and Gill were both flying the racer. At the Sopwith school over four hours' flying was put in, instructional flights being given to Cpts. Alston and Howell, H. S. Powell and S. Hedley, throughout the day.



Mr. Will Moorhouse in his monoplane at Brooklands.

During the day the new Army Aircraft Factory biplane twice came over from Farnborough piloted by Lieut. Fox. It differs from their former machines by having staggered planes, a larger body, and is fitted with a 50-Gnome driving a four-bladed propeller.

Sopwith was out on the Coventry Ordnance biplane, and during one flight took up Mrs. Buller, the Breguet pilot.

Dover Aerodrome.

ON Monday, the 13th inst., Jules Nardini, who had arrived from Calais the day before in his Gnome-Deperdussin, fitted with the new Cynros propeller, or rotary wing, as the inventor, M. Filippi, calls it, made a fine flight over the town and harbour, and excited keen interest among the spectators.

Sunday last he was again out and made a wide circuit round St. Margaret's and Whitfield, but the wind was treacherous and obliged him to come down after about twenty minutes' flight.

Mr. Chalmer's Henry Farman biplane arrived last week and was housed in its shed. The club-house is now erected and will be opened by the president, Marquess Camden, on the 12th of June.

Filey School (Blackburn Aeroplane Co.)

BRERETON was out last week on the Isaacson Blackburn, flying well in a 15-miles-an-hour wind. He made in all 23 separate flights, seven of which were with passengers.

Scott and De Villiers were both out, doing straight flights and landing well in spite of the wind. Scott made 11 separate flights of about three to four miles each, and landed perfectly in each case.

Liverpool Aviation School (Waterloo, near Liverpool).

WEDNESDAY and Thursday last week there was no work, too much wind and rain. Next day, Hardman on the school machine made a fine figure of eight, followed by a complete circle to the left during which the outside main wing stay broke. Fortunately the main spar stood the strain, but feeling that something was wrong with the balance he made an easy landing from about 30 ft.

Birch made several flights on Saturday, which included right and left-hand turns and one complete circle to the right, terminating with a perfect *vol plané* from 50 ft. Hardman then took the machine in hand flew a figure of eight, being in the air four minutes, after which he did several straight flights of over two miles each between 70 and 80 ft. high for the purpose of practicing *vol planes* in which he is becoming very proficient.

Birch was out before breakfast on Sunday and made two fine figures of eight about 60 ft. up each time being in the air over five minutes. Rain stopped work Monday. Tuesday in the morning, Hardman made several long straights in a 15-mile wind which was too strong for him to attempt turns. In the evening Hardman was again out, but in his first flight trouble developed in the engine which terminated operations.

London Aerodrome, Colindale Avenue, Hendon.

Grahame-White School.—Comm. Yeats-Brown on Monday last week was flying good straights on Biplane No. 1, and Mr. Lewis Turner circuits, &c., for pupils' instruction, taking up Lieut. B. T. James and Mr. Malcolm Stuart for several passenger flights on Biplane No. 10. Mr. Lewis Turner then in passenger seat instructed Lieut. James in rolling.

The school were on Tuesday at work soon after dawn. Mr. Lewis Turner flying circuits, figures of eight, and landing *en vol plané* on Biplane 10 for instruction to pupils, afterwards taking up Messrs. Malcolm Stuart, Norman Fuller, Kershaw, Manton, Lieut. James, and Capt. Nicholas. Comm. Yeats-Brown put in some straight flights on Biplane No. 1, and Capt. Nicholas the same on Monoplane No. 4.

Thursday was gusty during the day, but in the evening Mr. Lewis Turner had Biplane No. 3 brought out, it having been in the shops for repairs after a smash by one of the pupils, and flew several circuits for tests. He found machine flying low on left side, and returned it to works for further adjustments, after which Messrs. Richard T. Gates and Lewis Turner both flew her for test and found her to be in good running order. Commander Yeats-Brown was again at straight flights on Biplane No. 1, and Mr. Lewis Turner flying circuits for instruction on same machine.

Messrs. T. O'B. Hubbard and Gates put up some circuits. Friday, Lieut. James was rolling and doing straights, and Commander Yeats-Brown straights on Biplane No. 3, Capt. Nicholas, Mr. Baird and Mrs. Stocks made straight flights on Monoplane No. 4, and Mr. Lewis Turner was testing Biplane No. 1 previous to it being taken over for straights by Commander Yeats-Brown and Messrs. Morris, Roupelle, Kershaw and Manton.

Saturday Lieut. James at straights on Biplane No. 3 and Capt. Nicholas on Monoplane No. 4, whilst Mr. Lewis Turner was as usual demonstrating to his pupils, whose number during the week

was swelled by three new comers, Capt. J. M. Salmond, Mr. Ambrose G. Power and Mr. A. Meredith Wynne. In the afternoon the summer meeting took place, which is fully reported elsewhere.

As early as 4 a.m. on Sunday Mr. Lewis Turner was instructing Commander Yeats-Brown in straight flights on Biplane No. 1. In the afternoon a great deal of exhibition flying took place, including flights by Mr. C. Grahame-White, who was doing stunts on the Howard Wright and the old school 'bus, Mr. B. C. Hucks on his 50-h.p. Blériot, Mr. Ewen on his wonderful little Caudron biplane, Mr. Georges Preseill on a Blériot, Mr. Moorhouse giving fine exhibitions on his new R. and M. monoplane, whilst Messrs. Gates and Turner and Mrs. Stocks flew the Howard Wright in fine style. During the evening Mr. C. Grahame-White made a cross-country flight to Stanmore, taking tea with Mr. Churchill and flying back to the aerodrome; afterwards flying with Mrs. Arthur du Cros to her residence in Edgware, returning to Hendon after dark, his way and landing being shown by rockets sent up from the aerodrome.

Salisbury Plain.

Bristol School.—Jullerot early on Monday morning last week was giving tuition flights to Mr. Prendergast and Lieut. Pickles, Bendall taking Major Boyd Moss. Mr. Campbell and Captain Cordner were out making really good solo flights, but the rising wind prevented further flights.

Pizey was first out in the evening, making a trial of the conditions, and afterwards giving Major Boyd Moss tuition in landing, and also ascending with Mr. Prendergast, letting the pupil take charge of the machine. Jullerot was out with a prospective pupil, whilst Pizey took up Lieut. Pickles. Strong wind stopped further work.

At an early hour Tuesday morning, Jullerot made a trial on the new "Bristol" School two-seater monoplane, fitted with dual control, Lieut. Fielding accompanying him, as also did Lieut. Wyness Stuart and Mr. Pizey in two other flights. Major Boyd Moss was taken up for a high flight by Pizey, who then went up on the new school monoplane, reaching 800 feet, and carrying out a good flight. The machine is very easy to control, and lands in most graceful manner. Bendall was giving tuition flights to Major Boyd Moss and Mr. Prendergast, Lieut. Pickles setting out for his first solo, which he carried out in great style. Mr. Campbell put in a solo in rather trying circumstances, but made a fine flight, landing very neatly.

In the evening Pizey set out with Lieut. Ashton as passenger to test the conditions, Jullerot being also out on the new "side-by-side"



THE CIRCUIT OF LONDON RACE.

ON June 8th will take place, starting from the London Aerodrome, Hendon, the first aerial Derby, in competition for a hundred guinea trophy, offered by the *Daily Mail*. In addition to this trophy, first, second, and third cash prizes of £250, £100, and £50 respectively have been offered by Mr. Harold Barlow, a New Zealand sportsman, extremely keen on aviation, who is now visiting London. It will be a scratch race, that is to say, all the competitors will start together, and the first three to reach the aerodrome again will be awarded the prizes. The start, as far as is at present known, will take place about 4.15 in the afternoon. Previous to this will be run a speed handicap race, open to all comers, for a cash prize of £75 and a twenty-five guinea trophy, offered by the proprietors of Shell motor spirit. The course for this race will be over eight laps of the aerodrome.

The *Daily Mail* circuit of London will take place over a course totalling in length 81 miles. The various turning points and the directions and distances of each section are set forth in the table below:—

| Section. | Direction. | Distance. Miles. |
|---|----------------------------|---------------------|
| Hendon Aerodrome to Kempton Park... | S.W. by S $\frac{1}{2}$ s. | 14 |
| Kempton Park to Sandown Park | S.E. by S $\frac{1}{2}$ s. | 4 |
| Sandown Park to Russell Hill, Purley... | E. by S. | 11 |
| Purley to Purfleet | N.E. by E. | 18 |
| Purfleet to Epping | N.N.W. | 16 |
| Epping to High Barnet | W. by S $\frac{1}{2}$ s. | 14 |
| High Barnet to Hendon... | S.S.W. | 4 |
| | | 81 |
| | | — |

The directions of the above courses are given "true." For compass courses the variation at London of about 15° W. will have to be allowed for.

To assist those aviators taking part in the contest, we are

school monoplane, accompanied by Lieut. Fielding and later by Mr. Goutt, whilst Pizey took up Mr. Prendergast and Major Boyd Moss. Bendall was up for a solo, and Pizey had Mr. Prendergast for a tuition trip. Lieuts. Fielding and Ashton and Mr. Campbell all carried out good solos, Pizey taking Major Boyd Moss out for getting off and landing practice. This brought the day's work to a conclusion.

The weather was fearfully bad all day Wednesday. Pizey made several trials, but decided that the conditions were far too bad to permit school work. Attention was, therefore, confined to the hangars, overhauling spare Gnome engines, and adjusting machines. There was no improvement in the weather on Thursday, and another day had to be spent indoors. Friday the wind was still rather tricky. Several tuition flights, however, were given, but no sustained flying was possible.

There was no flying on Saturday morning. In the afternoon the Bristol Aero Club visited the schools. All the Bristol staff were out, and the members of the club were given passenger flights. Pizey made a trial of the air with Mr. Farnall Thurston as passenger, after which he made a number of flights accompanied by members. M. Jullerot was also giving passenger flights, making a trip on the new dual control monoplane with Lieut. Fielding. Pizey was busy giving lessons to Major Boyd Moss in getting off and landing. Pizey was in the new monoplane, making in all three flights with Messrs. Campbell, Bendall, and Major Boyd Moss. Mr. Campbell carried out a good solo on biplane No. 55, Lieut. Wyness Stuart ascending on one of the tractor biplanes, followed by Mr. Smith Barry on the same machine, Bendall taking Major Boyd Moss and Mr. Prendergast for tuition trips.

Bendall was the first out on Sunday morning, giving three flights to Mr. Prendergast, then ascending with Major Boyd Moss, and afterwards with two visitors at the school. Mr. Campbell made some very sharp right and left hand turns in a solo, reaching a height of 700 feet, and performing generally in a very creditable style. Lieut. Pickles also performed very well in the three flights which he made, making circuits at fully 600 feet.

In the evening Bendall took Mr. Prendergast for two trips, and afterwards went out with Major Boyd Moss, whilst Pizey gave tuition flights to Major Boyd Moss, and Messrs. Prendergast and Rawson-Shaw, the latter being a new pupil. Pizey was then on the two-seater side by side monoplane first with Captain Grace and then with Captain Allen. Mr. Campbell then successfully underwent the necessary tests for his certificate, passing them with comparative ease.



THE CIRCUIT OF LONDON RACE.

appending a description of each turning point, so that they may easily be recognised.

Kempton Park.—To the north of the railway station there is a high waterworks chimney, a square brick structure of a dark brown colour, and 230 ft. in height. Around its base are six shallow filter beds and a low building. This is the actual turning point. In the neighbourhood is a round chimney, only 130 ft. in height, with two very large reservoirs below.

Sandown Park.—The turning point is the racecourse grandstand.

Russell Hill, Purley.—A large school—the Warehousemen, Clerks, and Drapers' School—forms a very prominent turning point, as it is situated on the top of the hill. In the centre of the buildings is a tall spire, and a second spire rises from the chapel at the western end.

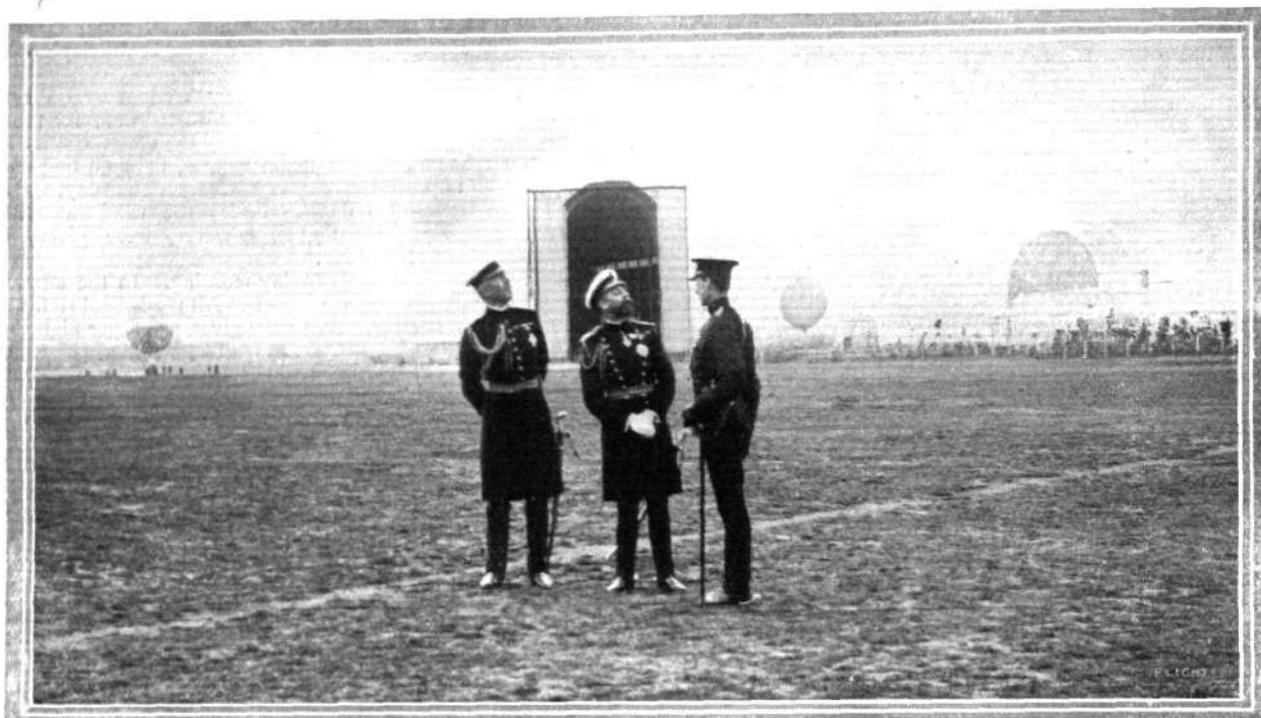
Purfleet.—Competitors will turn when they are directly above a group of five Government magazines—low buildings with slate roofs, and a dark grey water-tank on high supports on a neighbouring hillock. On the bank of the River Thames at Purfleet stands an hotel, while directly opposite, on the Kent shore, is a single house in the open. A training ship lies on the Purfleet side of the river, about half a mile to the eastward.

Epping.—Here the turning-point is a tower. It is a red tower at the southern end of Epping, about 200 yards south of Epping Church. It is about 120 feet high, and the top of it stands about 500 feet above sea level. Epping Church itself will be easily recognised from its white tower and red roof.

High Barnet.—A circular ferro-concrete water-tank will form the turning point. It is painted white and erected on high supports, to the westward side of the workhouse, between High Barnet and Arkley. Within half-a-mile of the turning point is a church which has a square tower at one end and a small spire at the other.

We hope to be able to publish in our next issue a map of the course, together with sketches of each turning point.

THE KING INSPECTS HIS ARMY FLYERS.



His Majesty King George watching one of the Army aviators during a flight at Aldershot on Friday of last week.
In the background will be noticed one of the dirigibles, the hangars, &c.

AFTER the Navy the previous week came the turn of the Army last week, and during his visit to Aldershot His Majesty the King saw that even as the Navy is not without capable flyers, so also the Army has a number of pilots capable of getting the best out of the equipment of the new arm. In preparation for the arrival of Their Majesties quite a lot of flying was seen at Farnborough, the flyers usually stationed there being supplemented on Tuesday evening by several officers from Salisbury, at one time five machines being in the air at once. Unfortunately when the King arrived on the following day, a forty-mile wind had taken possession and it was deemed inadvisable to allow the machines to go up; Their Majesties saw some work done with man-lifting box kites. In its usual fickle waywardness almost as soon as the Royal Party had left the ground the wind moderated and several ascents were made. On Thursday morning the King had a sight of Mr. Cody, now happily recovered from his accident, piloting his machine, which, in spite of a high wind, easily carried four passengers besides Mr. Cody. The machine, however, was only up for a short time. The various Army aeroplanes were out in the evening, full advantage being taken of the calm, and the evolutions were then watched by Their



"Clement-Bayard III" Beats Height Record.

ON the 9th inst. the new Clement-Bayard airship was cruising for an hour at La Motte Breuil with eight persons on board. It was tested for speed during a trip to Attigny and back, but the speed attained was not disclosed.

Continuing its series of tests, the new dirigible "Clement-Bayard III" was out for four hours on Monday morning. Starting from Lamotte Breuil, it cruised to Vic-Sur-Aisne and Noyon, afterwards returning to Lamotte Breuil. During this trip the airship went up to a height of 2,900 metres (9,513 ft.), thus beating the world's airship height record, previously held by the "Adjudant Reau." There were several passengers on board.

Wireless Experiments with "Z II."

THE airship manoeuvres at Cologne having fallen through owing to the absence of the other dirigibles various experiments have been recently carried out with "Z II." On the 10th inst. it was cruising for two hours above the military camp at Elsenborn, observing from a height of 1,400 metres the manoeuvres of several companies of infantry and artillery. The airship started from Cologne at 4.30 a.m. and returned seven hours later. During all this time it was in communication by means of wireless telegraphy with the stations at Cologne, Metz, Strasburg, Coblenz and Carlsruhe. On the 6th inst. the airship paid a visit to Coblenz, and on the following day it went to Aix-la-Chapelle.

Majesties from the grounds of the Royal Pavilion. On Friday, the King specially visited the headquarters of the Royal Flying Corps and the Royal Aircraft Factory. Their Majesties were received by Major Sykes, the new Commandant of the Military Wing of the Royal Flying Corps, who presented Capt. Burke, Capt. Lorraine and Lieuts. Fox, Reynolds, and Barrington-Kennett, together with Mr. De Havilland. Five of these pilots went aloft, the machines used including three built in the Royal Aircraft Factory, as well as a Nieuport and a Deperdussin. The new Avro biplane just taken over by the Army was also paraded, but was not actually flown. Perhaps the most spectacular flight of the day was made by Mr. De Havilland, who, having climbed up to 2,500 feet, suddenly dived to within 100 feet of the ground, and then gently came to rest just by his hangar. The King made a thorough inspection of the Aircraft Factory, and witnessed the progress made with the new airship "Delta," while Lieut. Waterlow piloted the "Beta" through some evolutions over the camp. Further flights were carried out later in the evening, when a large crowd assembled on the common to watch proceedings, while Their Majesties followed them from the Royal Pavilion.



The Ae.C.F. Grand Prix.

AT the time of closing the entries for this event on the 15th inst., the number had grown to thirty-six, these representing sixteen makes, ten of them being biplanes and twenty-six monoplanes*, as indicated:—1-5, Morane-Saulnier*; 6-8, Deperdussin*; 9-11, R.E.P.*; 12-14, Sommer*; 15, Deperdussin*; 16-17, Hanriot*; 18, Bréguet†; 19, Caudron†; 20, Bréguet†; 21-22, Astra†; 23, Zodiac†; 24-26, Nieuport*; 27-28, M. Farman†; 29, H. Farman†; 30, P. Zens*; 31-33, Blériot*; 34, Ladouge†; 35, Borel*: 36, Deperdussin*. In the ballot for starting order the first place, and also the last, was drawn by Deperdussin.

Accurate measurement of the course Angers, Cholet, Saumur Angers has shown the distance to be 157'411 kiloms, so that the three rounds on the first day, will total to 472'233 kiloms. and the four rounds on the second day to 629'644 kiloms., making the total distance 1,101'877 kiloms.

A New French Military Centre at Nancy.

FOLLOWING the visit of the Military Commission to Nancy, it is proposed to establish a flying centre at Brichandau Ground. Lieuts. Nicaud and Montjou are to make some landing trials there shortly and if these are satisfactory as it is anticipated they will be, the Minister of War has promised to station an escadrille of aeroplanes there, with a captain and five lieutenants, as well as the necessary establishment of a flying school.

FOREIGN AVIATION NEWS.

A Fast Trip of 250 Kiloms.

AIDED by a tempestuous wind, Vidart, on the 15th, flew on his Deperdussin monoplane from Saumur to Etampes, a distance of 250 kilometres, in the remarkably quick time of 1 hr. 35 mins. The wind was so strong that, on landing at Etampes, it overturned the machine, fortunately without doing any injury to Vidart, who returned to his post as chief instructor at the Ambeau school in a motor car.

The French Naval School at Montpellier.

Two of the hangars built at the Montpellier flying ground for the French Naval Aviation School have now been finished and Lieut. Cayla is awaiting the arrival of Lieut. Reynaud with a Farman hydro-aeroplane with which operations are to be commenced.

At the Farman School at Buc.

A TYPICAL day's work was done at the Farman School at Buc on Monday. Two officers qualified for their certificates, and Lieut. Vogayea made a first test for a superior certificate under the new conditions. Maurice Farman made several trips with passengers, and took one for a spin to Etampes. Nine of the military pilots at the school also made flights over the surrounding country during the day, and Lieut. Prot, by way of finishing his training, flew for an hour at a height of 100 metres.

An Hour on a Savary.

TAKING Sergeant Penet as an observer, Reichert, chief of the Savary Military School at Chartres, made a flight of an hour on a Savary with 70-h.p. Labor motor on Monday.

Servian Officers at Etampes.

FOLLOWING the example of the other Balkan States, Servia has sent two officers, Lieuts. Miloch Ilitch and Danilo Nenadovitch, as well as a non-commissioned officer to be instructed in the Blériot school at Etampes.

At the Caudron School.

DURING the week-end several fine flights over the Crottoy district have been made by Jacquemart on his Caudron, and on Monday, Gaston Caudron took a passenger from Crottoy to Cayeux and back. On Monday one pupil passed for his certificate and three others are ready to do so, Gally made a flight of 25 minutes and Galtier will soon try for a superior certificate. On the 18th Jacquemart was up to 800 metres for an hour.

Baron Cederstrom Tries His New Blériot.

AFTER two years of hard work from his old machine, Baron Cederstrom has ordered a new single-seater Blériot, and on Monday by way of testing it made four flights at Etampes.

Etampes to Orleans and Back.

ON Monday Baron Pasquier returned to Etampes on his Blériot monoplane from Orleans, whither he had flown in order to meet some friends on the previous Friday.

Entries for the Peugeot Prize.

THE entries for the Peugeot prize of 10,000 francs for the first flight accomplished by muscular power alone, over a distance of 10 metres, have now closed with a total of 196. The trials will commence on June 2nd, at the Parc des Princes Cycle Track. A second prize of 500 francs has been offered by M. Dubos for the flight, one decimetre high over a distance of one metre, on a transformed bicycle.

The Training of Observers.

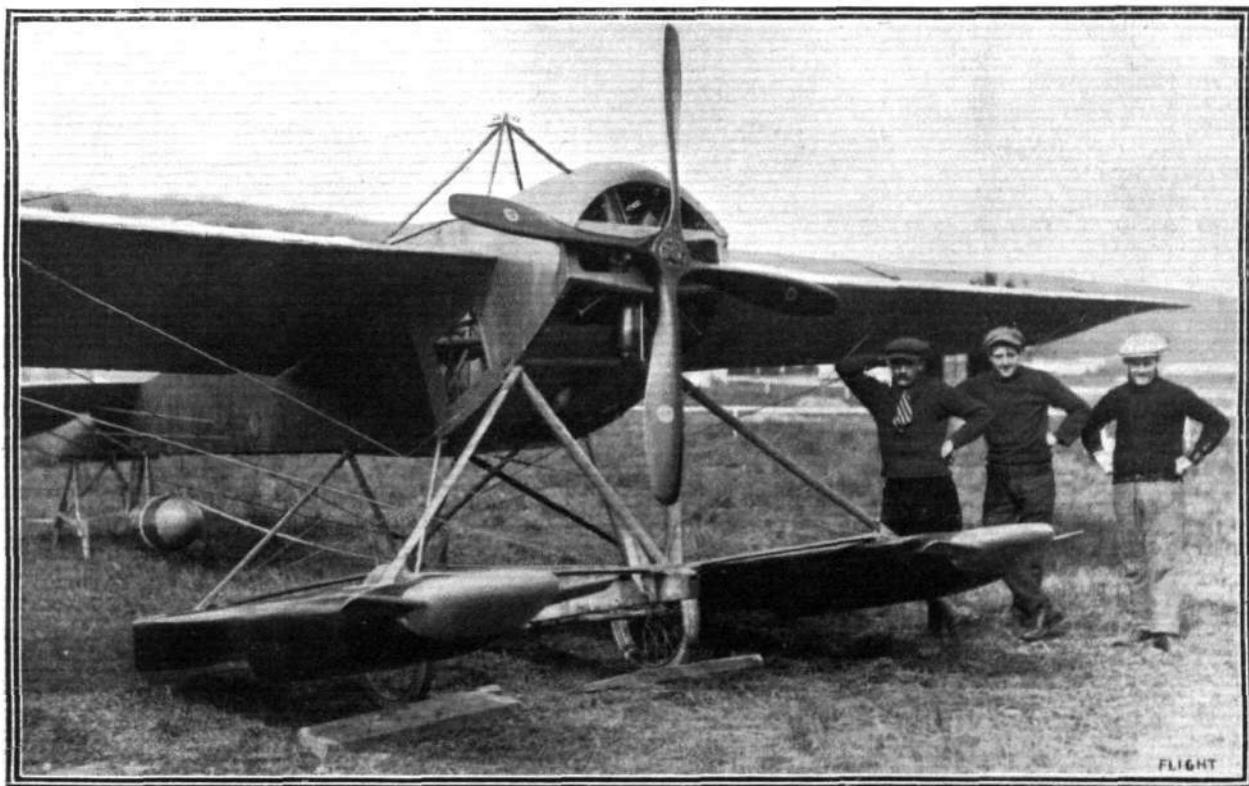
THE two months' course for the training of observation officers at Mailly Camp has ended with good results. Although the weather has been none too good, Capts. Boizard, Secretain, Brunet, Cordier, Hergault and Clanet all had many flights, some of two hours' duration and at heights between 1,000 and 1,800 metres, the pilots being Lieuts. Battini, Vaudein, Varcin, and Bordage on M. Farman machines and Sapper Bregi on his Breguet. During the period of training there has been no accident, although the aggregate distance flown by some of the machines was upwards of 5,000 kiloms.

Fatal Accident to Captain Echemann.

After flying on a monoplane from Vincennes to Etampes on Wednesday of last week, Capt. Echemann was testing another machine and in coming down from a height of a thousand metres, all went well until within sixty metres of the ground. Then the machine dipped steeply for another forty metres, while during the last twenty metres the machine fell practically vertical. The pilot sustained a fractured skull and died in the hospital during the evening.

Another Vedrines in the Field.

EMILE VEDRINES, the brother of Jules who is now recovering as fast as can be expected from his severe accident, has been making considerable progress as a pilot. On the 16th inst. he was flying



The latest Nieuport hydro-aeroplane, which is being put through experiments at Meulan under the direction of Lieut. Delage. Note the special construction of the front floats and the tail-sustaining float.

over the environs of Limoux, and on his descent was carried shoulder-high by the crowd.

Fast Flying on Train Monoplanes.

ON the 15th inst. Derome and Lieut. Levassor, both mounted on 50-h.p. Gnome-Train monoplanes left the Chalons Camp and flew in the direction of Rheims. They returned after an hour's flight which had been made at a speed of 95 k.p.h. and at an altitude of 1,000 metres.

Passenger Carrying on a Voisin.

ON his new machine De Ridder was busy carrying passengers on the 15th inst. Starting from Mourmelon with four passengers he went over Chalons and later took up a couple of friends. In the afternoon he carried three passengers for a trip over the Mourmelons and the neighbourhood. These feats were repeated on Saturday last.

Sippe Doing Well at Rheims.

ON the 15th inst. at Rheims, Sydney V. Sippe was trying one of the new Hanriot machines and made a trip of 50 kiloms. at a height of 400 metres. On Saturday he also made a good flight at a height of about 600 metres.

The Dorand Machine Flies.

RENE LABOUCHERE on the biplane designed by Commandant Dorand, flew on the 15th inst. with a friend from Villacoublay to Juvisy in order to visit some of his *camarades*. Later in the day he returned on the same machine to Villacoublay.

French Officers' Good Flight.

LEAVING St. Cyr at 5 p.m. on the 17th inst., Adjudant Drevet with another officer went to Chartres in three-quarters of an hour. They left at 7 p.m. for Orleans, but through being delayed by a strong head wind they were overtaken by night. Fires were lighted at the Groues aerodrome, and by the aid of these the aviators were able to effect a safe landing.



A sunset flight by S. V. Sippe on the Hanriot monoplane on May 17th at Rheims.—Passing over the Hanriot sheds.



S. V. Sippe in the pilot's seat of the new Hanriot, of Hanriot (England), Ltd., which he will be shortly flying at Brooklands.

More Farman Superior Pilots.

ON the 17th inst., Lieut. Grezeau completed at Buc the tests for a superior brevet on a Maurice Farman biplane and on the following day Naval Lieut. Reynaud completed his tests on a similar machine. The tests finished, he started off for a day's excursion and flying by way of Sours la Folie, Orleans and Etampes he got back to the Buc aerodrome at 8 p.m.

Barra Tries a Hydroplane.

BARRA who successfully piloted a Maurice Farman biplane some time ago is turning his attention to hydro-aeroplane. At Juan-les-Pins the other day he tried one of the Curtiss "Triads" and made a fine flight at his first attempt.

Long Flights in Germany.

ON the morning of the 18th inst., Buchstetter on a monoplane went over from Hamburg to Stendal in 2 h. and 3 min. The same day Lieut. Canter, with another officer left Doebritz at a quarter to five and landed at Naumburg at five minutes to eight.

Hydro-Aeroplane Competitions at Geneva.

WITH the object of attracting visitors during August to their city, the local association is organising a competition for hydro-aeroplanes which has been dubbed the championship of Europe and it is said that Paulhan will be a competitor with the Curtiss Triad. Meanwhile the Swiss Aero Club has fixed upon August 31st, September 1st and 2nd for its hydro-aeroplane competition on Lake Geneva.

A Swiss Height Record.

AT Lugano on May 16th, Attilio Maffei succeeded in rising to a height of 1,800 metres, during a twenty-five minute flight on a Blériot machine.

An Italian Motor Competition.

THE Italian Minister of War has published particulars of a competition for aeroplane motors, which it is proposed to hold at the beginning of next year. The motors must be built in Italy either by an Italian firm or by a foreign firm having a representative in Italy. To be eligible to compete, a motor must have driven an aeroplane for an hour's continuous flight, must be of between 60 and 80-h.p., and petrol consumption must be under 380 gramm per h.p. The maximum weight is 2·3 kilogs. for fixed, and 1·8 kilogs. per h.p. for rotary motors and the speed 1,300 revolutions per minute. The prizes have been fixed at £3,000 and £1,000 and the machines have to be delivered at Rome by January 10th, 1913.

Flying Over the Sahara Desert.

FOR the second time Lieuts. Lefargue and Reimbert have made a journey between Biskra and Touggourt, across the Sahara Desert. They intended to continue their journey, but the *remous* caused by the intense heat was so troublesome that they decided to wait for cooler weather.



Conducted by V. E. JOHNSON, M.A.

Steam-Driven Models.

IT was not our intention to have said anything further on this subject this week, but so much interest has been aroused by what has been already published, and so many correspondents have written—some “giving us good advice” re “The experiments on Epsom Downs,” &c., that a few further remarks appear unavoidable. There are also some misconceptions which require clearing up. In the first place, both the plant and model are at present purely of an experimental character. A single surfaced wing, constructed of magnalium tubing, was not used because it was thought to be more efficient than a carefully-built up double-surfaced one. Of course it is not so. It was used in the first place as an experiment, and in the second for convenience and lightness. The idea was (not yet carried out) to add a wire trailing edge, which would, of course, increase the efficiency as it would diminish the turbulence now existing at the rear edge. The pivoted front wheel and skid is merely an experiment—at present sufficient experiments have not been carried out to say whether the advantages outweigh the disadvantages or not. The reason why the loaded-elevator type was chosen instead of the tractor is certainly not, as one correspondent supposes, because “all or nearly all successful power-driven models are of this type” [a statement which, by the way, is not accurate, as in France it is entirely the other way about], but because the steam plant was considered less likely to get smashed up, and also because this type was preferred to commence experiments with. As to a power-driven model of this type being a certain flyer, well, all we need say is that when our correspondent possesses such a model—if he ever does—he will know more about the “certainty” than he does now. The camber of the planes is quite small. The wire skids are attached to the brass sockets joining the ribs and main framework by means of a little fitting made for that purpose. They are further stayed by means of two fine steel wires, one carried from the centre of the skid to the centre of the wing-tip, and the other to the centre of the second rib from the tip; the skid itself being fixed to the socket fittings of the first. In reply to some further correspondence we see no possibility of the production of a *cheap* power plant. It can be produced at present at any rate—only by really skilled labour—professional or amateur. The plant to be of any real good must possess at least a fair amount of lasting power, an engine which is practically done for at the sixth run (say) is useless, no

matter however fine runs two, three and four may be. Practically speaking the whole thing has got to be worked for all it is worth—or very nearly so, and only the best workmanship is of the least good in such a case—moreover, even that must be backed up by good practical experience. Under such circumstances, and they are the correct ones, we should place the cost of even a small plant at not a penny less than five pounds, and it might possibly be nearer seven or eight. No cheap plant has ever yet met with any success.

Mr. H. H. Groves’ Latest Achievement.

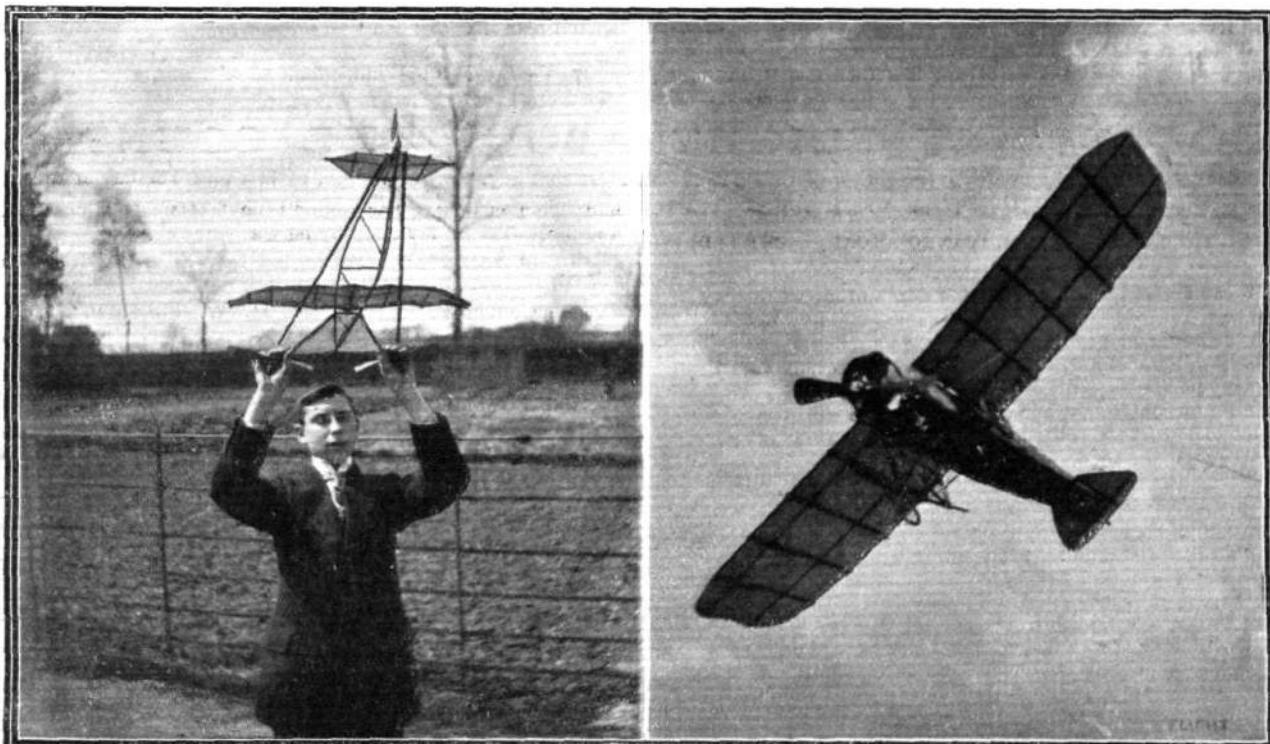
Since making the steam plant for our model, Mr. Groves has built another and smaller plant which he has fitted on to a very neat biplane of 3 ft. span and 2 ft. 8 in. length. The total weight of everything, model, plant, fuel, &c., is 20 ounces only. The plant has given a thrust of 6-ozs. for one minute. The model, up to the time of writing, has not (as incorrectly stated in last week’s issue, Blackheath Aero Club notes) actually flown; not on account of any fault in the plant, but because it was not correctly adjusted when tried. The correct adjustment and the automatic stability of a power-driven model possess peculiar difficulties of their own, which in general take several trials before success is attained. As can be seen the thrust is ample, and granted that a power-driven model of such small weight and dimensions can in the end be made to give a one minute flight, then the achievement will indeed be a notable one.

Messrs. Rolfe Bros. Models.

We give this week two illustrations of models made by the above firm. The makers state that the Bristol-type model has made over 100 flights. Also that the other model illustrated is the identical machine which won the Flight Golf Competition in a gale at Coventry last July, and that it has flown in all weathers (rain, hail and snow). Also that the propellers (distinctive type) of bentwood have not in any way lost their shape—a fact which the makers attribute to the special method of making them.

Tempered Steel Wire for Models.

Mr. J. C. Balden has forwarded a sample of tempered steel wire, gauge 19, which he uses for the size of plane required by J.A.B. The wire can be obtained from Messrs. A. Causland and Co., 3, Mitchell Street, Glasgow, price 4d. per $\frac{1}{4}$ lb. It is done up in coils of 15 ins. diameter, and when uncoiled is absolutely straight.



MESSRS. ROLFE BROTHERS’ MODELS.—On the left their distinctive type model, and on the right their Bristol type.

I consider it better than piano wire, and it is very easy to work.' Judging from the sample sent—it appears very suitable for the purpose—piano wire is by no means an accommodating thing to deal with.

Hydro-Aeroplane Duration Record.

The best flight made by the Scottish Ae. Model Club up to May 1st was, we understand, duration 15 secs., distance 324 ft. The model landed on the ground so the distance could be measured. This flight was made by Mr. C. F. Arthur, who wishes to know if this is a club record for such, both with respect to distance and duration.

Messrs. J. Bonn and Co. T-Section Birch Wood.

We have received from the above firm some samples of this sectioned wood, which they at present stock in the three following sizes, $\frac{1}{4}$ in., $\frac{5}{8}$ in., and $\frac{3}{8}$ in. in 4 ft. lengths. The condition, &c., of the wood leaves nothing to be desired. Mr. G. Rowlands (we noted at the last official trial) uses it, and at present he holds the official distance record. In the Wakefield competition last year we gained 84 marks out of a possible 100 with a T-sectioned T frame, so naturally we are somewhat partial to it. Aeromodellists who have not tried this sectioned wood could scarcely do better than give it a trial.

The London v. Birmingham Contest on Whit-Monday.

The contest between three of the leading London Model clubs and the Model Section of the Birmingham Aero Club—as announced in last week's issue—at Parkside, on Whit-Monday, is sure to draw a considerable number of interested spectators. In a cutting sent us of the *Daily Mail* (Midlands edition) it is stated that "Birmingham is far and away ahead in the matter of individual records, and that on Easter Tuesday a flight of 972 yds. was made, and a duration of 103 secs.—including a glide of 30 secs.—obtained." It is also stated that London's longest duration is 68 secs., which is as correct as perhaps something else. We also learn that these models (the Birmingham ones presumably) are exact replicas of full sized craft. Verily if Birmingham can do over 900 yds. distance and 100 secs. duration with such machines—London has cause to tremble for the result—still, we have no doubt they will do their level best to "keep their end up." We can only hope the weather conditions will be favourable.



THE KITE AND MODEL AEROPLANE ASSOCIATION.

OFFICIAL

NOTICES.

Gifts of Prizes.—The President, Col. F. C. Trollope, has presented a handsome silver cup to the association, for a competition at end of the year. Also Major B. Baden-Powell (Past President), has presented a £5 prize for an ornithopter competition. He says: "the principle of flapping wings is a mode of aerial propulsion which may prove to be of greater efficiency than that obtainable by screw propellers. I shall be glad to see the principle tested in model form and I shall therefore be pleased to give a prize of £5 to be given to the designer of the machine which in the opinion of the Judges performs the best flight travelling a distance of not less than 100 ft. through



PROGRESS OF FLIGHT

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St.

MODEL CLUBS.

Models at Lichfield (A. COLLINS, IVANHOE ROAD, LICHFIELD).

ALTHOUGH we are not so fortunate as to possess a recognised model club at Lichfield, there are a round dozen of model flyers who have been hard at work since Mr. C. Grahame-White on his historic London-Manchester flight dropped here. At a meeting in Bowling Green Fields on Saturday, J. C. Forsdyke with new mono. obtained duration 30, 35 and 40 secs., best distance 150 yards; C. Redfern (one-ouncer) duration 50, 55, and 64 secs. (120 ft. high); A. Wilson (3-ounce mono.) 50, 55, 63, 65, and 69 secs. (300 yards).

Aero-Models Assoc. (N. Branch) (Sec., MALCOLM B. ROSS, 15, HIGHGATE AVENUE, N.).

FIRST committee meeting of re-organised club on 15th inst. The club will retain above title, and in future entirely govern its own affairs. Rules drafted and provisionally accepted pending next committee meeting. Flying at Finchley on Saturday, when a new club's duration record was established by H. D. Murray (single-screw 1-1-0-2 P) with 69 secs. beating M. B. Ross's record (59 secs.). H. E. Fletcher obtained 35, 38 and 39 secs. duration. G. W. Pidsley (biplane) good, and high flights all afternoon. New 4-footer under tests by M. B. Ross. Flying also by G. O. Partridge

the air." Application for official observers. The Paddington Aero Club having applied for official observers to be present at Parkside on Whit-Monday when a four-sided inter-club contest takes place between Birmingham, Blackheath, Ealing, and Paddington Clubs. The application has been granted and observers appointed.

Baden-Powell Competition for best Kite of year takes place to-day, Saturday, at 3 p.m. on Wimbledon Common. Competitors should note that they must be present by 2.30.

W. H. AKEHURST, Hon. Sec.

27, Victory Road, Wimbledon.



ABOUT THE COUNTRY.

Martin's Lane, London, W.C., by first post Tuesday at latest.

and several visitors. The ground is not far from Hendon Aerodrome, and most of Saturday good flying was witnessed.

Bath and Somerset Aero Club (Hon. Sec., S. H. BAKER, II, ELM PLACE, BATH).

At Committee on 17th, Mr. H. W. Frampton occupied the Chair. New members elected: Messrs. J. L. Newstead, G. M. Hick, E. L. Bascombe, A.M.I.C.E., and F. W. Bascombe.

Mr. Patrick V. Alexander has become a Vice-President, and made the club a magnificent offer, which will shortly be announced.

Mr. G. E. Page, of "Alderney," Bloomfield Avenue, Bath, has been elected joint hon. sec. in view of Mr. S. H. Baker having possibly to retire shortly.

For club next flying meeting, Mr. G. E. Powell, the hon. treasurer, has promised a 10s. prize, and Messrs. Willis Bros. 2 pairs of propellers.

In view of the increased club membership, it has been decided to enlarge the general committee, and Messrs. G. E. Page and G. F. Rawlings have been invited to serve.

Birmingham Aero Club (Model Section) (Secs., R. COBHAM and G. H. WOOD, 8, FREDERICK ROAD, EDGBASTON).

On Saturday the average of the four best flights 75 secs. Several splendid towed flights of 400 yards with Mr. Platt's mono-

plane glider were made without a passenger. This glider is being converted into a biplane, when glides with a passenger on board will be made. To-day (Saturday), qualifying flights for the team to visit London on Whit-Monday. June 1st, contest with Coventry Club will be re-flown.

Blackheath Aero Club (Hon. Sec., A. E. WOOLLARD, 48, HAFTON ROAD, CATFORD, S.E.).

AT Grove Park good flying by Mr. Egelstaff (single propeller), Mr. G. Brown (gearless biplane), Mr. A. Clark (Ding Sayers), Mr. Hinchcliffe (1-1-P-O) and Mr. F. M. Bailey, especially altitudes and distance.

At Blackheath, Mr. A. E. Woollard made 289 yards, obtaining his 2nd class certificate ; Mr. F. Whitworth flew 0-1-1-2 P machine, Mr. S. Hunt a tractor, and Mr. Hinchcliffe model as above, also small machine, weight of which could not have been more than 4 oz. Last week's report re Mr. Groves' new steam biplane was incorrect ; the machine did not get off the ground.

To-day (Saturday) and Sunday, trials to select team for inter-club contests. The Grove Park ground will be used on Saturday.

On Whit-Monday, a four-sided contest with the Birmingham Ae.C., Paddington Ae.C. and the Ealing Ae.C. The club also meet the latter at Greenford on June 8, 1912.

Brighton and District Model Aero Club (Hon. Sec., A. VON WICHMANN, "KINGSLEIGH," KINGSWAY, HOVE).

GOOD work on 18th at Shoreham. Bate, Williams, Orford, Knowles, Wichmann, and Burghope out. Extraordinary high flights by Bate. Mr. Burghope's big Nieuport doing several flights, one 52 yards. To-day, 25th, flying at Shoreham. All members are asked to participate in competition for thirty shillings in prizes offered by aerodrome habitués. Flying on Whit-Monday at Shoreham. Mr. Burghope will fly his Nieuport on both days.

Coventry Aeroplane Building Society (Sec., J. W. SCHOFIELD, 22, KINGSTON ROAD, EARLSDON).

AT Aerodrome, Allsley Old Road, Mr. S. Shorters obtained duration of 60 secs., distance 266 yards ; Mr. E. Cobbs (twin) 261 yards at good pace ; others flying : Mr. R. A. Rice, Mr. A. Austin and Mr. A. Lawrence. Mr. Eric W. Walford, well known in motoring circles, has taken up duties as hon. secretary of the society.

Distance competition for Mr. W. A. Weaver's prizes June 1st at Aerodrome, Allsley Old Road.

Croydon and District Aero Club (Sec., 158, HIGH STREET).

DURING past three weeks the club's duration record of 54 secs. has risen to 61 secs. On May 5th Mr. C. Smither had several flights, 54 to 57 secs.

On Sunday Mr. D. Paveley, with model, made during morning, got four flights of 57, 59, 60 and 61 secs., timed by Mr. P. R. Butler, and checked by the Secretary.

Flying every evening at Sanderstead and Mitcham, and Wednesday, Saturday and Sunday afternoons at Mitcham.

Steps are being taken by the Club to arrange a series of visits to the surrounding districts, where flights will be given, and in this way it is hoped that a large number of enthusiasts will be brought in touch with the Club.

Dundee Aero Club (Y.M.C.A., 10, CONSTITUTION ROAD).

CLUB have obtained new workshop and club-room in Y.M.C.A., with new bench and electric light.

Saturday evening Messrs. Stewart, Powrie, Dobbie, Gow, and Robertson paid a visit to Law Hill and obtained some very spectacular flights. A Dunne-type monoplane glider (model) did over 4-mile and 60 secs. Powrie's machine disappeared over town, and has not yet been found. In the workshop a model Chanute glider (4-size) is nearing completion.

Flying to-day (Saturday) in Baxter Park, at 3.15 p.m., and in Lochee Park on Saturday following.

Ealing and District Aero Club (Sec., B. J. KIRCHNER, 1, QUEEN'S GARDENS, EALING, W.).

SATURDAY only few members present. Feature of afternoon Mr. Beeching's rising off the ground single tractor mono. ; length 24 ins., span 20 ins. ; tail non-lifting with vertical fin above. The others flying, Messrs. Fenwick and Evershed (two new members), Mr. Chilcott and Mr. L. Roche. Fixtures : May 27th, (Whit-Monday), at Parkside, four-sided contest v. Paddington, Birmingham and Blackheath Ae. Clubs. June 8th, v. Blackheath Ae. Club.—June 15th. Record Trials of K. and M.A.A. (Last two at Greenford). To-day Saturday and Sunday, eliminating trials at Greenford.

On Saturday, at Greenford, Mr. L. Roche, with monoplane having an original plane, obtained duration 31 secs. and over 1,000 ft. Mr. Chilcott about 1,000 ft. and 30 secs. Other members flying : Mr. C. Evershed, Mr. Fenwick, Mr. G. Beeching (tractor monoplane, with landing chassis and single-tractor screw), over

70 yards and 12 and 13 secs. duration. On Sunday Mr. Beeching obtained over 70 yards.

Flying to-day (Saturday), Sunday and Monday at Greenford. Contest at Parkside, Sudbury, v. Blackheath, Birmingham, and Paddington Clubs. Members are to fix protectors to their models in competitions, by order of the committee.

East Ham and District Aero Club (Sec., C. SHARP, 54, SAVAGE GARDENS, EAST HAM).

COUNCILLOR M. Oakes, J.P., Mayor of East Ham, has accepted the presidency. The club has now two spacious flying grounds, and the Committee is engaged in preparing an attractive summer programme. At New Beckton last week, the secretary's single-sticker was doing 300 to 400 yards at an enormous height. H. Bedford's baby monoplane flew well, as also S. Whear's A-frame model. Result of single-screw competition—C. Chaffey first, with C. Penny a good second. Workshop is now in full swing, and the Committee will feel obliged if model firms will forward their catalogues.

Hackney and District Aero Club (Sec., B. H. LONGSTAFFE, THE HOLLIES, JENNER ROAD, STOKE NEWINGTON, N.).

CONTEST with Paddington Saturday last. Hackney won with narrow margin of 1½ secs. average being 28½ secs. against 26½ secs. for Paddington. Best durations : Louch, 49 secs. ; Lewin, 34 ; Gittus, 29½ ; Bond, 28. Return contest June 1st. At special meeting on Whit-Monday, Longstaffe duration competition will be flown, also Gittus novice competition. Model exhibition at Spensley Hall, June 7th.

Macclesfield and District Ae.C. (BLAKELOW RD., MACCLESFIELD).

MR. HORNER with 6-oz. heavy type model made club's record with 61 secs. and ¼ mile. Others flying : Mr. Fleet, Mr. Corbishley, Miss B. Horner and Miss Lowndes.

Manchester Model Ae.C. (40, BIGNOR STREET, CHEETHAM).

FLYING meeting May 25th at Aerodrome, Old Trafford Park, 2.30 p.m. Prizes of 7s. 6d. and 2s. 6d. for best flights made upon the following formula :—

$$\frac{\text{Total weight of machine} \times \text{Duration of flight in secs.}}{\text{Weight of elastic used.}}$$

Paddington and Districts Aero Club (Sec., W. E. EVANS, 133, BUCHANAN GARDENS, HARLESDEN).

RESULT of Inter-Club Contest with Hackney and District Club ; Hackney won by 1½ secs. ; their average being 28½ secs., against Paddington's 26½ secs. Best times were—for Hackney :—Louch, 49 secs. ; Lewin, 34 secs. ; W. P. Gittus, 29½ secs. ; Bond, 28 secs. ; Marmin, 23 secs. ; Longstaffe, 7 secs. For Paddington :—Woolley, 42½ secs. ; Chalfont, 35 secs. ; Carter, 28½ secs. ; M. Levy, 24 secs. ; W. Evans, 19 secs. ; Lane, 12 secs.

To-day (Saturday), Club Competition for silver and bronze medals for duration. Members eligible to compete as novices for the bronze medal are as follows :—Messrs. Dibbern, E. Evans, Johnson, M. Levy, Officer, Peach, Rasmussen, Sargent, Whybrow and Wood. Models, excepting propellers, to be made by the competitors.

Whit-Monday, four-sided contest between Birmingham, Blackheath, Ealing and Paddington clubs. The President, Mr. V. E. Johnson, will time.

Reigate, Redhill and District Aero Club (Sec., H. V. MAY, 4, LONDON ROAD, REIGATE).

DURING past week, machines out nearly every evening. Mr. J. Sutton with 2½-oz. model obtained 242 yards, and durations over 30 secs. H. Osborne's monoplane in tuning up did 276 yards. Mr. M. Wilson took his 3rd class ticket with 20-oz. 'bus. Mr. H. Vellay obtained 315 yards, and over 30 secs. duration with 4-oz. model. Mr. W. H. Norton tuning up triple-bladed tractor monoplane, flying at Earlswood on Saturday (to-day) and also on Whit-Monday.

Salisbury Model Aero Club (Sec., E. M. LEAR, VICTORIA COFFEE ROOMS, BUTCHER Row).

FLYING in artificial light on Tuesday evening, Sperring's "rise-off-the-ground" machine got off in 4½ yards, but crashed into a lamp-post, completely smashing propeller, which was made from some wreckage of Mr. G. B. Cockburn's "Father of Farmans."

Result of competition at "Old Sarum" on Wednesday : 1st, Besent, 38 points ; 2nd, Dickenson, 33 ; 3rd, Lear and Sperring (tie), 31 each. Besent obtained best duration (51 secs.), and Lear longest distance (387 ft.).

Next meeting at headquarters, May 21st, at 7.30 p.m.

Scottish Ae.S. Model Aero Club (6, MCLELLAN STREET, GOVAN).

LAST week, Mr. J. C. Balden put in some useful work with his hydro-aeroplane at Great Western Road. Mr. J. S. Gordon was teaching some boy scouts in model flying, as they are to give a display at the forthcoming inspection next month.

Saturday competition cancelled owing to the Barrhead Aerodrome being used for the local cattle show. A most successful meeting, however, was held at the Racecourse, Paisley, where Messrs. Balder, Foster and Gordon put in some excellent practice. To-day, Saturday, hydro-aero meeting at pond, Whiteinch.

Next Saturday, 1st June, flying demonstration at Broomhill Homes, Kirkintilloch.

Sheffield Model Aero Club (Hon. Sec. C. F. W. CUDWORTH, 35, PENRHYN ROAD, SHEFFIELD).

COMPETITION Whit-Monday in field (lent by Mr. B. Roberts, Marsh Farm, High Lane, Ecclesall), opposite the Bungalow. Chief item the Colver Cup (members only). Mr. Broomhead has given silver medal for best constructed model aeroplane on view at the competition. Other events and prizes. Flying starts 2.30 p.m. Judges: Messrs. E. W. Colver, A. V. Kavanagh, W. Blake, and J. M. Younie. Next meeting Broomhead's Dining Rooms, Leopold Street, June 6th, at 7.30, when prizes will be distributed.

Stony Stratford and District Kite and Model Aero Club (Hon. Sec., O. HAMILTON, JUN., OLD STRATFORD).

WEDNESDAY Mr. Matson and Mr. R. Elmes, and Thursday Mr. Moore putting up performances for club records, Thursday evening at general meeting election of officers, &c., for ensuing half year, Mr. C. L. Matson resigned the chairmanship mainly owing to distance he has to come. A vote of thanks was passed for his services. Mr. Wainwright and Mr. Watson were nominated for the vacant chair and on ballot Mr. Wainwright was declared elected. Committee, resignation was received from Mr. H. Hamilton owing to business season; Mr. Haseldine was elected to vacancy. Mr. O. Hamilton, Jun., was again elected as secretary and Mr. R. Elmes assistant secretary. Accounts showed a good balance. Following club records were passed: Mr. R. Elmes, distance, 249 ft.; Mr. Matson, duration, 23 secs.

Results on Saturday of postponed competitions flown in gusty wind: Kite competition, Master H. Moore, Mr. E. Brown and Mr. Haseldine; eight entries, six flew. Duration, Mr. T. A. Moore,



CORRESPONDENCE

* * * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which have appeared in FLIGHT, would much facilitate ready reference by quoting the number of each letter.

Position of Engines on Biplanes (1548) and the Gough-Turner Clinometer.

[1553]. In reply to Mr. Bedford's letter under above heading. The method he suggests of enclosing pilot and passenger in a streamline casing has been successfully adopted on a Bristol tractor biplane I saw at the Bristol School at Lark Hill the other day.

In this machine, as in the Caudron biplane, no front elevator is used and a monoplane tail takes the place of the rear *cellule* of the Farman—a decided improvement. I am afraid I do not see why lowering the chassis would strengthen it. Perhaps Mr. Bedford would explain. The view could be improved by fixing the streamline body midway between the upper and lower planes.

I see that one or two writers in the Aviation Press make a point of condemning "box-kite" biplanes as being dangerous and obsolete machines. In view of the excellent flights made by C. Grahame-White, Lewis Turner and other experienced pilots on machines of this type at the Hendon meetings and their extensive use at Tripoli in preference to faster and more modern machines, I think some of these critics should make at least a qualified apology.

Re the Gough-Turner Clinometer described in page 424, Vol. IV. of FLIGHT. An instrument of this kind should furnish data very valuable to aeronautical engineers. However, no mention is made of the effects of acceleration and retardation on the proper working of the indicator.

Effects similar to those produced by varying the angle of incidence will be produced, and unless they can be compensated for, accurate readings can only be taken when land speed is constant.

The effects alluded to may be very slight but I should like to hear what the maker has to say on the subject.

Bristol.

A. V. TIVY.

British Manufacturing Firms.

[1554] Our attention has just been called to a letter signed by "Craftsman" (1544) in your issue of the 4th inst. The letter certainly required an answer and we take this opportunity of assuring "Craftsman" that the whole object of the Aircraft Co. is to construct the French machines here of British material, and by British workmanship. We shall, of course, have to import a few French machines with this object in view. It may interest

30 secs.; Mr. J. W. Watson, 15 secs.; Mr. E. Brown, 7 secs. Juniors' competition cancelled owing to insufficient entries. Distance competition not finished, it being decided to fly later in the current week.

Windsor Model Flying (Sec., S. CAMM, 10, ALMA ROAD).

FOURTEEN models out on Saturday. Flights averaging 45 secs. Secretary's biplane flying well. On Sunday Club duration record broken by flight of 62 secs. with S. Camm's Trykle type. Flying to-day, Saturday, in Home Park.

Yorkshire Ae.C. (Model Section) (5A, HULLAND ST., LEEDS).

ON May 14th at the Hotel Metropole, the members had great pleasure in listening to Mr. R. Blackburn, inventor of the well-known Blackburn monoplane.

The lecturer dealt with such important points as the bracing of wings and the stresses and strains on the various parts of a monoplane. Heated discussion took place on the possibilities of the steel machine as the machine of the future, also upon the design of propellers. About 30 members were present, and a most interesting and instructive evening was spent, all thanks due to Mr. Blackburn.

SCHOOL AERO CLUB.

Southgate County School Ae.C. (84, BOWES RD., PALMER'S GREEN).

AFTER general meeting on 10th inst., discussion was held on "Tractor-Screw" Models. Thanks due to Mr. A. Trollope of Palmer's Green Club for loan of his "tractor" model. Members adjourned to School Hall afterwards, where E. R. Brown's "tractor" rose from ground and flew length of room. Tractor Competition (duration) early in June (possibly June 8th). Six entries already.

Reed, Ellinghaus and Brown flying on Saturday. Reed's model persisted in doing sharp steeply-banked circuits. Brown testing single screw self-rising tractor; several short flights, in spite of strong wind.

It is hoped to arrange a contest with Holloway County Secondary School Aero-Models Club before the summer vacation.



"Craftsman" also to know in view of his reference to the Aeronautical Syndicate that we have taken over their works at Hendon, and are employing their men previously occupied in aeroplane construction.

We believe the easiest way to catch up with the advance held in France is to construct here *identical* machines with those giving such satisfactory results in the French Army, thus producing them as British machines.

THE AIRCRAFT CO.
St. Stephen's House, Westminster, S.W.

The Position of the Pilot.

[1555] I understand that the chief weights of an aeroplane, i.e., the engine and pilot, should be kept close together to diminish the "moment of instability." In practice what difference in their flying capacities would be exhibited by machines in which the distance between these two masses was 5 ft. and 10 ft. respectively?

Collindale Avenue.

J. A. CHARNIER, Capt.

The Aircraft Factory Aeroplane.

[1556] No. 1542, writing in the issue of May 4th of your valuable paper, wishes to know if the Army biplane B.E. 2 is as good as he has heard. All I can say is, that the machine is one of the finest pieces of work I have ever seen, and that in case of starting and quietness of engine, also stability in a wind, it must be quite as good a machine as any produced on the Continent, certainly in France. Your correspondent would find it quite worth his while to go to Farnborough one evening and see the Army machines up. There is no charge for admittance, and there is always something on on week-days. There is also a strange contrast between Cody's roaring cathedral and the little, silent machines of the derided factory.

Norfolk.

FLYING FOX.

[1557] With reference to letter 1542, referring to the aeroplanes produced by the Royal Aircraft Factory, your correspondent seems to be rather doubtful as to their qualities. I see these machines almost every evening, living as I do near Cove Common, where they disport themselves, and I am therefore in a position to judge.

B.E. 2 thoroughly shines in stability and speed, its fuselage is of very good stream-line form and head resistance is reduced to a minimum. The engine with which it is fitted has been effectually

silenced, the only noise now heard being that of the tractor. It is amazing to see it banking and gliding with the inimitable G. de H. at the wheel. Its controls are so beautifully sensitive that it can taxi on *terra firma* as easily as a motor car.

It would do your correspondent a world of good to visit Farnboro' in order to see and then believe.

LE PETIT OISEAU.

Limiting Stresses in Wings.

[1558] It is not certain from his letter, No. 1538, in your issue of the 4th inst., how far Mr. Flanders wishes to press the point brought forward by him at the Aeronautical Society discussion that the limit of stress which could be put upon an aeroplane wing at a given speed of flight is represented by the reaction which such wing would experience if driven normally through the air at the same speed. I am not aware how far the following considerations have been taken into account by the constructors of aeroplanes, but as they have not been mentioned in this discussion I set them out below.

In the first place it must be remembered that the text book values for the resistance experienced by aerofoils moving relatively to the air deal only with uniform motion—variations in velocity being avoided as far as possible in the experiments on which these values are founded. In other words, the phenomena dealt with are relatively stable, readings only being taken when such is the case. But when we change the attitude, and consequently the angle of inclination of the wings of an aeroplane in free flight, we have to take account of a different type of phenomenon, including an accelerating rotating movement of the aerofoil. The effect of this additional factor on the resistance of the aerofoil has not yet been properly investigated. It is well known in hydraulics that if a body be plunged into a uniformly advancing fluid stream the reaction experienced by the body at the instant of immersion is greater than subsequently, when a stable stream-line motion round the obstacle has been established. In the case of air, it is, of course, known that when a screw-propeller is started up a greater reaction is experienced at first, although the rate of revolution is less than it will eventually be, than when the full speed of revolution has been attained for some time. Lilienthal and others (Kouchino, &c.) have also made experiments which show very clearly that, as consideration would lead us to expect, a stream-line system following the lines of least resistance which will be eventually reached cannot be set up instantaneously, and that while it is being set up an enhanced reaction is experienced by the body causing the setting up of the system of flow. Very many important results follow from this fact, which is due to the same properties of the air which enable us to fly, but we are only concerned here with its bearing on the wing-stress question in aeroplanes. To obtain some valuable experimental data to apply it to this question we should have to drive a plane through the air at nil angle of inclination, and then, as quickly as possible, change the angle to 90°. We should not be able to turn the plane instantaneously, because in attempting to do so an acceleration factor would be introduced into the reaction opposing the turn, which would be enhanced sufficiently to slow down the rotary movement. However, we could, no doubt alter the angle of attack quickly enough to get an acceleration effect in the resistance experienced by the advancing plane. That is to say, the resistance at the moment when it reached 90° would be greater than after it had been at that angle for a short time, and correspondingly if the turn were arrested at smaller angles than 90°, notwithstanding that the rate of advance were kept constant. The exact amount of added resistance which would accrue for a given speed and degree of turn we have not sufficient data to determine. Experiment is urgently needed on this point.

It is obvious that if an aeroplane is flying with its wings at the ordinary small positive angle and if, in order to dive, this positive angle be suddenly turned to a negative one, the system of flow appropriate to the first angle must be suddenly wiped out and a new system, appropriate to the second angle, must be set up. The wings will therefore experience during the transition from one system to the other, not a reaction which can be ascertained by reference to an ordinary pressure curve, but an enhanced reaction which might be considerably in excess of that which they would receive at normal presentation in a uniform current of the same speed as their rate of advance. How much greater this enhanced reaction may be depends upon the quickness of change of attitude, and its degree. In ordinary flying in still air the change would not be unduly quick nor extended over a wide enough range to lead to undue stressing. We are not, however, considering ordinary flying, but rapid evolutions, and it is clear that during these, whether they be dives, or sudden turns to the right, left or upwards, we have to reckon with the acceleration factor in the aerodynamic reactions which are set up.

Aerial disturbances which cause sudden changes in the attitude of the aerofoil relative to the wind must also introduce a similar acceleration effect.

The type of force set up in the above circumstances is one which may have a very great intensity but will have always a very limited range through which it acts. In the extreme case, it is of the nature of a percussion. Consequently a rebound effect comes into play when such a force is applied to an aeroplane's structure. The latter "gives" to the first impact, it is to be hoped no further than is good for its elastic limit, and then we should in favourable circumstances have a repercussion of the wing and the air, which would give a series of shocks of diminishing intensity. It might occur, of course, that the series was of increasing intensity and then the aeroplane would be severely tested. Hydroplanes have, in somewhat analogous circumstances, been smashed as effectively as if they had struck a rock.

There are two further considerations arising from what has been said above. Firstly, as the enhanced acceleration reaction mentioned is due to the fact that the steady stream lines have not yet been reached, the stream-line system which does actually exist at the instant of acceleration may give a differently directed resultant from the later ones and so lead to different location of the centre of pressure. This fact may lead to undue stressing of the wing.

Secondly, the actual force set up by the rotation of the wing while its attitude is being changed may add a quota to the complex forces, to which it is subject at the moment of change, sufficient to lead to undue stressing.

In conclusion, I think I ought to say that the acceleration problem which has been mentioned above is under the consideration of the Research Committee of the Aeronautical Society, by whom a report will shortly be issued. The Committee will be glad to hear from anyone who has new matter to contribute towards the elucidation of this problem.

Tooting Graveney, S.W.

BERTRAM C. COOPER.

Planes, Ltd.

[1559]. I notice in your article "From the British Flying Grounds" last week, a paragraph under the head,—"Freshfield, the Mersey Aeroplane Co.," which, though in the main thoroughly accurate would tend to convey the impression that the Mersey Aeroplane Co. are the aviation department of Planes, Ltd. On the contrary they are simply licensees and tenants of Planes, Ltd., and have purchased on certain conditions Planes, Ltd.'s. latest machine, which in large part was designed by Messrs. Fenwick and Swaby when in the employ of Planes, Ltd. as managers.

PLANES, LTD.

W.M. P. THOMPSON, Chairman.

6, Lord Street, Liverpool.

Model "Records."

[1560] In reply to Weston Hurlin Co.'s letter (No. 1551) re the World's duration record, our Mr. Trykle will be pleased to meet Mr. Weston to contest for this honour. The contest to be flown under the K. and M.A.A. Rules, at any time and place suitable to Mr. Weston. If, however, we may be allowed to make a suggestion, we should suggest Whit-Monday, May 27th, as Mr. Trykle will be visiting London on that day in connection with the Birmingham Aero Club's visit to the Paddington and Districts Aero Club.

Trusting this meets with Weston, Hurlin Co.'s approval,
OVERTON, KING & CO.

2, Stanley Street, Coventry.

Natural Stability.

[1561] I have written to Messrs. Weston, Hurlin and Co. re their acceptance of my challenge in the following terms:—

Eccles.

WILLIAM BOOTH.

(Enclosure).

"I am delighted with your acceptance of my challenge and willingly agree with your stipulation re Kite and Model Aeroplane Association rules and observers.

"Re conditions. I would suggest that the K. & M.A.A. be asked to draw up a series of tests for lateral stability. I am content to leave this matter in their hands, provided the tests they impose are sufficiently stringent.

"Re time and place of contest. I am willing to fly at any time convenient to you after Whitsuntide, and as you are good enough to leave it to me to arrange conditions, I suggest the Manchester Aero Model Club's ground as the place of meeting."

World's Records and Natural Stability.

[1562] "A Question of the World's Record" (1551) does not appear to us to be a question of the world's record at all, but rather of the British official record, which is quite a different thing. The world's records for distance and duration are to the best of our

knowledge and belief held by Mann monoplanes, 1,400 yards distance and 1 min. 40 secs. duration.

In reference to the stability question raised by Mr. Hurlin, we hope he will be kind enough to allow the Mann monoplane to take part in the suggested contest, and we can only add that we would prefer a wind of at least double the maximum of 40 m.p.h. he mentions.

Surbiton.

MANN AND GRIMMER.



THE FIRST BATH AVIATION MEETING.

In addition to running weekly aviation meetings at Hendon, the Grahame-White Aviation Co., Ltd., have decided to inaugurate several meetings in the provinces. Bath was selected as the first provincial city to visit, and arrangements were made for such a notable quartet of flyers as Messrs. Claude Grahame-White, Gustav Hamel, B. C. Hucks, and W. H. Ewen to give exhibitions at the Glass House Farm flying ground, Combe Down, on Tuesday, Wednesday, Thursday, and Friday of this week. Of these four, Hucks flew down to the meeting from Hendon on Tuesday morning, while Hamel intended, if the weather permitted, to fly down to Bath on the machine with which he flew on Tuesday last from Paris to Eastchurch in company with Miss Trehawke Davis. Hucks started at 5.55 in the morning, bearing with him a letter from the Lord Mayor of London to the Mayor of Bath and a special aeroplane edition of the *Daily Mirror*. He reached the exhibition ground, a distance of 106 miles from Hendon, at 7.40, having encountered two severe rainstorms on the way at Reading and Swindon. Mr. Grahame-White left for Bath on Wednesday. At the time of going to press the accounts of the first day's flying to hand give the weather as of a most atrocious nature, but that both Hucks and Ewen provided exhibitions. Mr. Gustav Hamel, we know, had the intention of making an attempt on the world's altitude record while at Bath.



THE UPPER RHINE CIRCUIT.

In our last issue we were only able to chronicle the doings of the competitions up to the end of the first stage to Metz. In addition to the four who got through on the first day, Lieutenant Vogel arrived at Metz on the 13th inst. On the following day the second stage to Sarrebruck was taken, and the five competitors succeeded in getting through, although Lieut. Vogel smashed his machine on landing. Early in the morning he had made a reconnaissance as far as Thionville. He gave a favourable report as to the weather conditions and the judges decided to start the flyers at 5 a.m. The first away was Hirth, and he completed the stage in 1 hour 18 mins. He was followed by Wolfskeel, Bahrends, Mahnke and Vogel, all of whom got through in good time, although Vogel met with disaster at Sarrebruck. Prince Henry watched the progress of the competitors from the dirigible "Victoria Louise." The next day the journey was continued to Mayence and this time Count Wolfskeel started first, taking Lieut. Heller as an observer. He was followed at two-minute intervals by Lieut. Mahnke, Lieut. Bahrends and Hirth. The last named was the first arrival at Mayence, having taken 47 mins. for the journey, while Wolfskeel took 1 hour 21 min. 44 secs. The other two competitors also got through in good time. On the 17th inst. the course was from Mayence to Frankfort, with a stop at Darmstadt for an altitude competition. To get to Darmstadt was only a matter of 24 mins. for Hirth, while the slower machines took very little longer. The Victoria Louise also took part in the altitude competition, and rose to 1,000 metres in 4 mins., while of the aeroplanes which were set to rise 500 metres, Hirth got up in 5 mins., Bahrends in 6 mins. 27 secs., Wolfskeel in 10 mins., and Mahnke in 14 mins. In the afternoon a restart was made for Frankfort, Hirth leading the way as usual and taking 25 mins. for the trip, the others arriving in the following order—Bahrends, Mahnke and Wolfskeel. Mahnke damaged his machine on landing, but it was not sufficient to prevent him continuing the next day, when the destination was Carlsruhe. With Hirth still leading, the four competitors safely made the journey in the following times:—Hirth 22 mins., Bahrends 30 mins., Mahnke 43 mins., Wolfskeel 44 mins. On Monday the stage to Friburg was a longer one (120 kiloms.), but it was successfully made in the same order:—Hirth 1 hour 10 mins., Bahrends 1 hour 57 mins., Mahnke 2 hours 4 mins., Wolfskeel 2 hours 10 mins.

The circuit was completed on Tuesday with the flight to Constance, the aeroplanes being escorted by the "Zeppelin XII." The times for this stage were: Hirth, 1 hr. 33 mins.; Bahrends, 1 hr. 35 mins.; Wolfskeel, 1 hr. 36 mins.; and Mahnke, 1 hr. 38 mins.



PUBLICATION RECEIVED.

Verhandlungen der Versammlung von Vertretern der Flugwissenschaft. Munich: R. Oldenbourg.

A Two Days' Meeting in Algeria.

A very successful two days' meeting was held at Algiers on Friday and Saturday last, when a number of demonstration flights were made by Ehrmann and Dancourt, on their Blériot monoplanes. On the second day a balloon also made an ascent, and was chased by the aeroplanes.

The Gyroscopic Effects of the Gnome Engine.

In an aeroplane fitted with a rotary engine, there is always a tendency for it to dive on a left-hand turn, and rise at its nose on a right-hand turn with a right-handedly rotating propeller. The opposite effect is obtained with a propeller rotating in the opposite direction. Dr. Zahm has investigated the question quantitatively.

The force tending to make the aeroplane rise or dip depends entirely upon the angular speed of the turn, the speed of rotation, and the moment of inertia of the rotating mass. The latter can be found experimentally by suspending the mass and finding the time period of an oscillation about the axis desired. Dr. Zahm tested a Curtiss propeller of the following dimensions: Diameter, 8 ft.; pitch, 4 ft. 6 ins.; r.p.m., 1,200; weight, 17 lbs.

The gyroscopic torque he found to be $292 \times v$ lbs.-ft., where v is the velocity of deviation.

Mr. Sidney V. James applied the method to a 50-h.p. Gnome motor and found that the gyroscopic effect was 1.7 times the value for the propeller alone, a value which seems exceedingly small when the relative weights of the two masses are considered in spite of the difference in the two radii of gyration.—*Scientific American*.



NEW COMPANIES REGISTERED.

Hanriot (England), Ltd., 412, Moorgate Station Chambers, E.C.—Capital £5,000 in £1 shares. Acquiring the rights for Great Britain, &c., of the Hanriot aeroplanes.

Sussex Aero Club, Ltd.—Capital £2,000 in £1 shares. Under agreement with the Brighton-Shoreham Aerodrome, Ltd.



Aeronautical Patents Published.

Applied for in 1911.

Published May 23rd, 1912.

- 7,774. SIR H. S. MAXIM. Bombs for use in connection with aeroplanes.
- 8,220. SIR H. S. MAXIM. Bombs for use in connection with aeroplanes.
- 10,345. A. S. HAMILTON. Aeroplanes.
- 14,434. J. C. HULBERT. Aeroplane control.
- 29,395. E. LALLOUETTE. Aeroplanes.

Applied for in 1912.

Published May 23rd, 1912.

- 4,502. F. W. BARKER AND J. F. COFFIN. Stabilising means.

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